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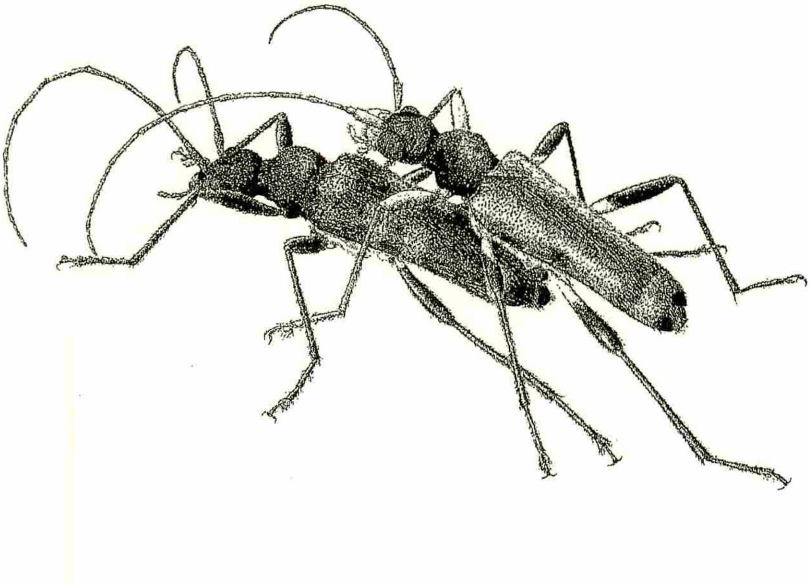

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An Addition to the Genus *Pectocera* (Coleoptera: Elateridae) from Is. Kume-jima of the Nansei Archipelago

"Some New Forms of Elateridae in Japan (XXXII)"

Takashi KISHII

Kamihamuro 1–10, 6–410, Takatsuki, Osaka, 569–1044 Japan

Abstract *Pectocera maruyamai* sp. nov. is described from Is. Kume-jima of the Nansei Archipelago.

In 1998, I have had an opportunity to study on a species consisting of three specimens of the genus *Pectocera* HOPE from Is. Kume-jima lies near Is. Okinawa-honto of the Nansei Archipelago collected by Mr. Munetoshi MARUYAMA of the Hokkaido University through the courtesy of Mr. Kozo MIZUNO. From the Nansei Islands, four species and a subspecies of this genus have hitherto been known: *P. hige yakuana* KISHII, 1993 (Is. Yaku-shima), *P. amamiinsulana amamiinsulana* NAKANE, 1957 (Is. Amami-ohshima), *P. amamiinsulana ogatai* KISHII, 1996 (Is. Tokuno-shima), *P. yonaha* KISHII, 1996 (Is. Okinawa-honto), and *P. yaeyamana* W. SUZUKI, 1976 (Iss. Ishigaki-jima, Iriomote-jima and Taiwan), but none from Is. Kume-jima.

In the general appearance present species from Is. Kume-jima is closely allied to known species mentioned above, but is differrent from them in the shape of male genitalia, dark coloured body and small obscure maculation on elytra. Therefore, I am going to describe it as a new species under the name *Pectocera maruyamai*. The holotype is preserved in the collection of the Osaka Museum of Natural History (OMNH), and the rest are preserved in the author's collection.

Before going into further details, I would like to express my deep gratitude to Mr. Munetoshi MARUYAMA (Entomological Laboratory, Faculty of Agriculture, Hokkaido University, Sapporo, Japan) for his kind offer of this interesting elaterids, and my cordial thanks are also due to Mr. Kozo MIZUNO (Uji City, Kyoto) for his continuous kind help in studying on click beetles.

Pectocera maruyamai KISHII, sp. nov.

(Figs. 1–5)

Male. 27.0–27.6 mm in length, 6.1–6.3 mm in width. Rather stout, elongate, depressed above as well as below, parallel-sided medianly and wholly subopaque. Entirely dark reddish brown except for eyes and apices of mandibles more or less blackish. Pubescence tender, short, distinctly dense, recumbent, straightened, whitish silver, and obscurely and rather irregularly maculated on elytra.

Head clearly narrow, quadrate, parallel-sided, with a deep medio-longitudinal furrow from anterior margin to behind the middle; relative breadth between eyes and each eye in dorsal view as 74 : 50 (ca. 1.5 times, holotype); eyes distinctly large, spherical, plainly projecting laterad and over the anterior angles of prothorax; latero-anterior corners upon antennal sulci well-developed, thickly and roundly mucronate, and entirely smooth at apices; frons rather perpendiculaly declined antero-inferiad, without any carination at frontal margin, which joins to rear edge of labrum; antennal sulci subovate, definite and shallow; punctures rather longitudinally elliptic, dense, not so large, but partly irregular in size, shape and density, and their interstices smooth and distinctly narrow. Mouth parts large, projecting ahead, with mandibles well developed. Labrum semicircular, with an acute denticle at the middle of anterior edge; punctures rounded, a little dense at anterior part, but uneven in density and size, and entirely smooth in medio-posterior area.

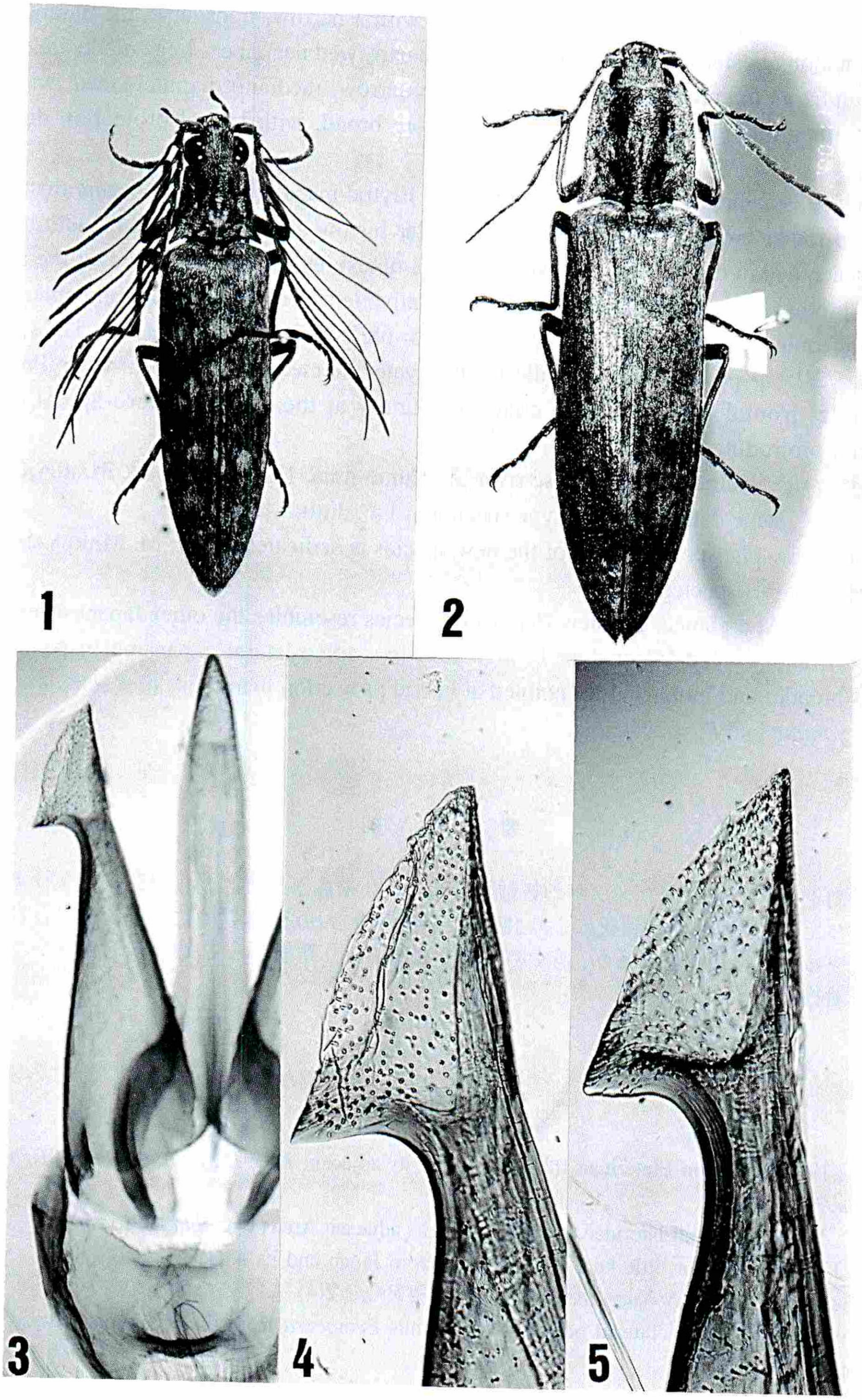
Antennae plainly flabellate from 3rd segment; relative length (excl. flabellum)/apical width from basal segment to 11th as 72/30, 20/27, 39/17, 43/18, 46/18, 44/16, 50/15, 51/12, 58/10, 64/10 and 415/18 respectively; basal segment robust, expanded near apico-anterior side, straight at posterior side, 2nd smallest, transverse triangular or nearly cup-shaped, and broader than long, each flabellum from 3rd to 10th well flattened, and 11th nearly equal to total length of 2nd to 10th segments together and depressed like flabellum.

Pronotum rather small, trapezoid, irregularly depressed in medio-lateral area, simply and medio-longitudinally elevated, with a wide, shallow and longitudinal depression at the middle; lateral sides minutely and unevenly crenated, gently and straightly narrowed from base of each posterior angle to anterior corners; frontal margin roundly expanded anteriad at the middle; latero-apical corners rounded right-angledly; hind angles distinctly divergent postero-laterad, acutely pointed at apices, having no carination nor furrow; posterior margin slightly and roundly dilated medio-posteriad, and finely crenated near hind angles; discal surface generally with uneven, small and a little dense punctures and mixing a few large ones, and their interstices wholly smooth and rather broader than their diameters in average.

Scutellum subtrapezoid, widest at anterior corners, then gently convergent posteriad before hind margin, which is feebly rounded, weakly excavated at the middle of frontal edge, clearly and transversely depressed before the hind margin, and evenly with dense and minute punctures.

Elytra flattened, weakly and narrowly depressed along lateral sides; striae absent, but some vestige traceable behind the middle, with punctures fine, a little sparse, rather even, and their interstices smooth; apices very acutely pointed.

Prosternum wholly smooth, narrowest behind the middle, then plainly divergent anteriad as well as gently so posteriad, strongly and medio-longitudinally elevated below at the middle, sparsely and unevenly with minute and large punctures commixed, having a pair of circular depressions on lateral sides, with punctures distinctly fine and dense; anterior lobe broad, transversely depressed behind frontal edge, with punctures obviously large, dense and coarse. Prosternal process elongate, narrow, straightened, distinctly expanded laterad near the middle, in profile robust, plainly bent inwards behind procoxae, then straightly protruding posteriad, with apex rounded. Prosterno-pleural sutures closed, roundly and divergingly extending anteriad. Propleural punctures distinctly minute and dense. Metasternal punctures more or less



Figs. 1–5. *Pectocera maruyamai* sp. nov.: 1, Habitus, male, holotype, 27.6 mm; 2, ditto, female, paratype, 39.2 mm; 3, Male genitalia, holotype, dorsal view; 4, ditto, apex of paramere, holotype; 5, ditto, paratype.

sparser than those of propleuron. The 6th sternite with a narrow, transverse, membranous and smooth rim along posterior margin. The 7th sternite narrowed near apex. Legs moderate.

Genitalia as figured (figs. 3–5): median lobe narrow, medianly parallel-sided, with apex subacute; apico-lateral expansion of each paramere broad, with lateral projection distinctly pointed.

Female. 39.2 mm in length, 7.9 mm in width. Elytral maculation more obscure than that of male. Head rather broad, with a clear and triangular furrow at frons; relative breadth between eyes and each eye in dorsal view as 104:33 (ca. 3.2 times); eyes large, but not over the anterior angles of prothorax. Antennae entirely filiform; relative length of posterior margin/apical width from basal joints to 11th as 50/28, 25/18.5, 73/25, 68/28, 63/25, 65/24, 58/23, 52/21, 50/20, 43/16 and 72/19 respectively; 2nd smallest, subclavate and clearly longer than wide. Pronotum subquadrate; frontal margin a little concave roundly at the middle; latero-apical corners triangularly protruding ahead.

Type series. Holotype: ♂, Shirase river, Is. Kume-jima, 17. III. 1998, M. MARUYAMA leg. Paratypes: 1♀, same data as the holotype specimen; 1♂, ditto, 14. III. 1998.

Etymology. The specific name of the new species is dedicated to Mr. M. MARUYAMA, who discovered first this species.

Remarks. At a glance, this new *Pectocera*-species resembles the other Japanese species in the general features, but larger than *P. hige yakuana*, apico-lateral expansion of paramere in aedeagus broader and more sharply pointed at lateral projection than those of *P. amamiinsulana* s. lat., *P. yonaha* and *P. yaeyamana*.

要　　約

岸井　尚：久米島産ヒゲコメツキの新種. ——— 久米島からはこれまでヒゲコメツキ類の記録は無かったが, 最近丸山宗利氏により3個体の資料が得られた. 外見的には奄美大島及び沖縄本島に分布する種と似た点もあるが, 多くの特徴で別種であり新種として記載した(クメシマヒゲコメツキ：新称).

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Three New Taxa of the Genus *Hemicrepidius* (Coleoptera: Elateridae) from West Japan

"Some New Forms of Elateridae in Japan (XXXIII)"

Takashi KISHII

Kamihamuro 1–10, 6–410, Takatsuki, Osaka, 569–1044 Japan

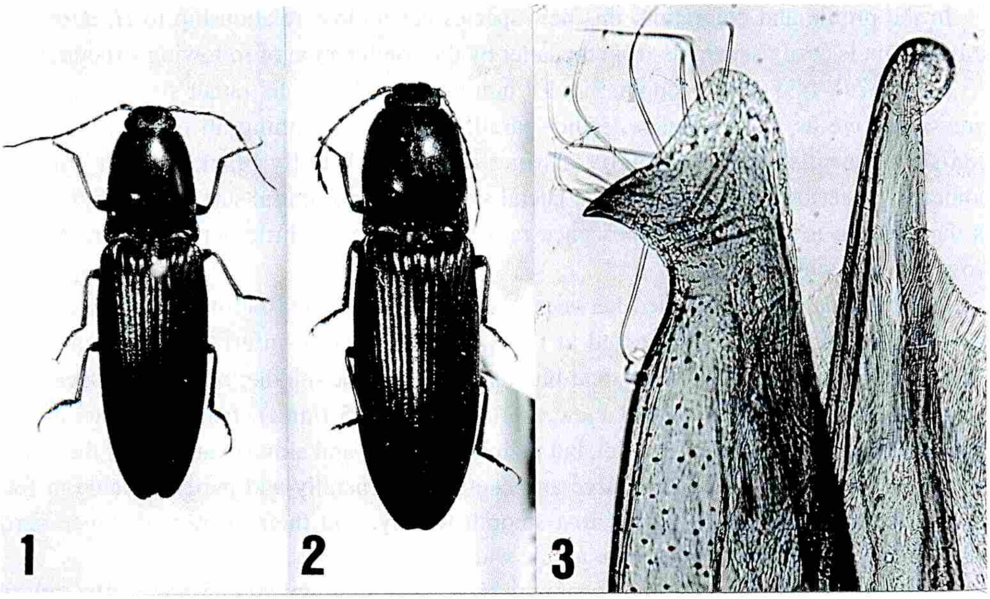
Abstract A new species and two new subspecies of the genus *Hemicrepidius* (s. str.), *H. kumaso* sp. nov. from Miyazaki and Kumamoto Prefectures, *H. secessus yakuanus* subsp. nov. from Is. Yakushima and *H. desertor taishu* subsp. nov. from Is. Tsushima are described.

Hemicrepidius* (*Hemicrepidius*) *secessus yakuanus KISHII, subsp. nov.

(Figs. 1–3)

Hemicrepidius (*Pseudathous*) *secessus* CANDÈZE: NAKANE et KISHII, 1958, Sci. Rep. Saikyo Univ. (Nat. Sci. Liv. Sci.), Kyoto, 2 (5): 36–37 (Is. Yakushima); KISHII, 1959, Bull. Heian High Sch.: 12 (Is. Yakushima).

Male, 16.9–17.0 mm in length, 4.6–4.7 mm in width; female, 14.6–19.4 mm in length, 4.1–5.2 mm in width.



Figs. 1–3. *Hemicrepidius* (*Hemicrepidius*) *secessus yakuanus* subsp. nov. 1, habitus, male, holotype, 16.9 mm; 2, ditto, female, paratype, 20.1 mm; 3, apical part of male genitalia, dorsal view, holotype.

The present new subspecies is distinguishable from the nominotypical one from Japan proper: *Athous secessus* CANDÈZE, 1873: 23 (Hiogo) by the following points: 1) body generally voluminous, more or less larger and robuster; 2) 3rd antennal segment ca. 1.5–1.6 times as long as 2nd in male (in the nominotypical one, ca. 1.7–1.8 times); 3) head punctures a little denser; 4) posterior angles of pronotum in dorsal view clearly broader and shorter; 5) elytral punctures on strial intervals more or less larger and denser; 6) apical end of elytron plainly and obliquely cut off interiad (in the nominotypical one, generally feebly truncated or rather emarginated); 7) prosternal and propleural punctures distinctly larger and denser; 8) apico-lateral expansion of paramere in male genitalia acutely pointed and well protruded laterad

Distribution. Is. Yakushima in Kagoshima Prefecture.

Type series. Holotype: ♂, Kosugi-dani valley, Is. Yakushima, Kagoshima Pref., 28. VII. 1968, H. NARA leg. Paratypes: 1♀, same data as the holotype; 2♀♀, Kosugi-dani valley, ditto, 22–23. VII. 1950, T. SHIRÔZU leg.; 1♀, ditto, 7. VIII. 1957, T. SHOJI leg.; 1♀, ditto, 15. VII. 1967, Y. KUZUGAMI leg.; 1♂,1♀, ditto, 17. VII. 1972, O. TAMURA leg.; 2♀♀, Hana-no-ego, ditto, 25. VII. 1966, Y. HAMA leg.;1♀, Mt. Miyanoura-dake, ditto, 28. VII. 1966, Y. HAMA leg.; 1♀, ditto, 21–23. VII. 1967, K. MIZUNO leg.; 2♀♀, Miyanoura-rindo, ditto, 12. VII. 1972, O. TAMURA leg.; 3♀♀, Shiratani-unsui valley, ditto, 17. VII. 1989, N. NARUKAWA leg.; 1♀, Koshima, ditto, 30. VII. 1967, K. MIZUNO leg.; 1♀, Hirano, ditto, 19. VII. 1987, S. YAMAYA leg.

Etymology. The subspecific name of the present new subspecies is given after the type locality "Is. Yakushima".

Hemicrepidius* (*Hemicrepidius*) *kumaso KISHII, sp. nov.

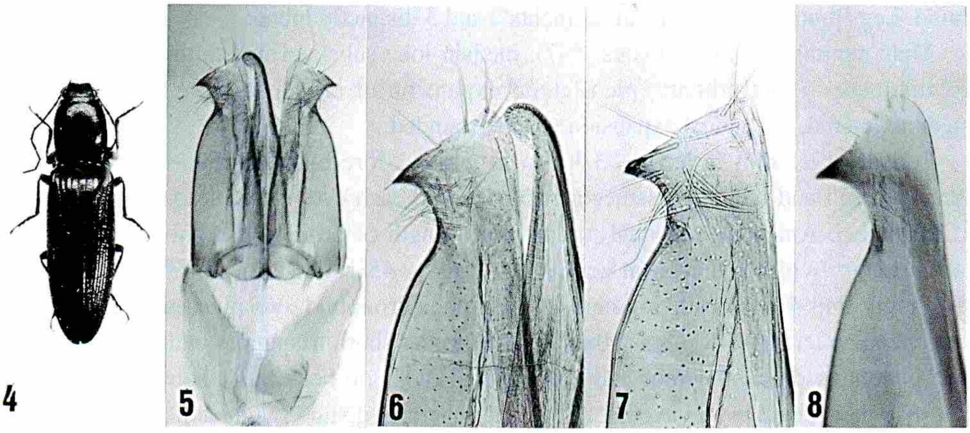
(Figs. 4–7)

In the profile and coloration, this new species has a close relationship to *H. desertor* of CANDÈZE, but is easily separable from the latter by the combination of following structures.

Male, 12.0–14.3 mm in length, 3.1–3.7 mm in width. Elongate, rather slender and a little depressed above as well as below, rather parallel-sided, and shining all over, with metallic greenish or purplish tint, especially distinct on elytra. Wholly blackish with antennae, prothoracic posterior part, basal part and lateral sides of elytra, ventral surface and legs more or less dark brown to yellowish. Pubescence rather thick, long, a little dense and erected, and yellowish white with some tint.

Head broad, nearly flattened between eyes, weakly elevated before posterior edge and shallowly and triangularly depressed at frons, declined antero-inferiad, with frontal edge definitely and triangularly carinated, and bluntly pointed at the middle; relative distance across eyes and each eye width in dorsal view as 100:22 (ca. 4.5 times); frontal groove distinct, triangular and deep near antennal sulci, but plainly narrowed and almost vanished at the middle. Vertex with punctures subcircular, large and dense, but generally and partly variable in form, size and density with interpunctate area smooth wholly, and their average distance across punctures subequal to their diameter or a little wider.

Antennae slender, exceeding pronotal hind angles by apical 2.5 segments; relative length/width from basal segment to 5th as 53/22, 24/14, 33/21, 47/30 and 48/28, respectively; basal segment voluminous and roundly expanded at anterior side, 2nd subclavate, 3rd triangular,



Figs. 4–7. *Hemicrepidius* (*Hemicrepidius*) *kumaso* sp. nov. 4, habitus, male, holotype, 14.0 mm; 5, male genitalia, dorsal view, holotype; 6, ditto, apical part of aedeagus; 7, paramere, paratype from Ebino. Fig. 8. *Hemicrepidius* (*Hemicrepidius*) *desertor desertor* (CANDÈZE, 1873), apex of paramere, from Mt. Takachiho.

4th to 10th clearly serrated, and 11th elongate rhombic, parallel-sided and longer than 10th.

Pronotum elongate, subquadrate, roundly expanded laterad at the middle, then gently narrowed anteriad, distinctly narrowed at each base of hind angles, and simply and roundly convex above, without any median line nor impression, plainly declining at posterior slope and relative median length to width as 115:100; hind angles elongate triangular, obviously and divergently developed postero-laterad; each with a distinct carination running parallely to lateral margin and roundly pointed at apex; each basal furrow at hind margin distinct and clearly notched; punctures simple and circular, smaller, sparser and rather evener than those on head, their interstices entirely smooth and more or less wider than their diameters in average.

Scutellum tongue-shaped, distinctly declivous antero-inferiad, feebly medio-longitudinally elevated, obtusely pointed at hind apex, weakly expanded anteriad at frontal margin, and simply, densely, a little minutely and rather unevenly punctured; relative median length to maximum width as 62:38.

Elytra elongate, parallel-sided from near humeri to posterior 2/3, then gently roundly convergent posteriad; hind apices moderately rounded, but each sutural end obscurely mucronate; striae finely furrowed with discontinual and elliptic punctures; strial intervals weakly elevated, with punctures plainly fine, sparse and distinctly uneven in density, and their interstices generally smooth.

Prosternum oblong, subquadrate, narrowest before procoxal cavities, then weakly and straightly divergent anteriad, roundly and longitudinally convex below simply, and broadly transversely concave near anterior 1/3 of prosternum with anterior lobe roundly expanded ahead and transversely furrowed at the base; general punctures on prosternum distinctly smaller and sparser than those on pronotum, but obviously larger and denser at anterior lobe, and their interstices entirely smooth. Prosterno-pleural sutures linear and wholly closed. Prosternal process elongate, a little bent inwards behind procoxal cavities, then straightly protruding posteriad, with hind apex obtusely pointed. Propleural punctures a little larger and denser than those on prosternum. Mesosternal cavity elongate, subparallel-sided at the middle and rather horizontal. Metasternal punctures similar to those on prosternum. Metacoxal plates distinctly narrowed at lateral half, moderately broadened near bases, with lateral ends rather obtusely pointed. Legs moderate, with tarsal segments 2 and 3 distinctly lobed.

Male genitalia as figured (figs. 5–7); median lobe subequal in length to parameres, with apex distinctly roundly bent; apico-lateral expansion of each paramere triangular, acutely projecting laterad, and apical expansion weakly rounded.

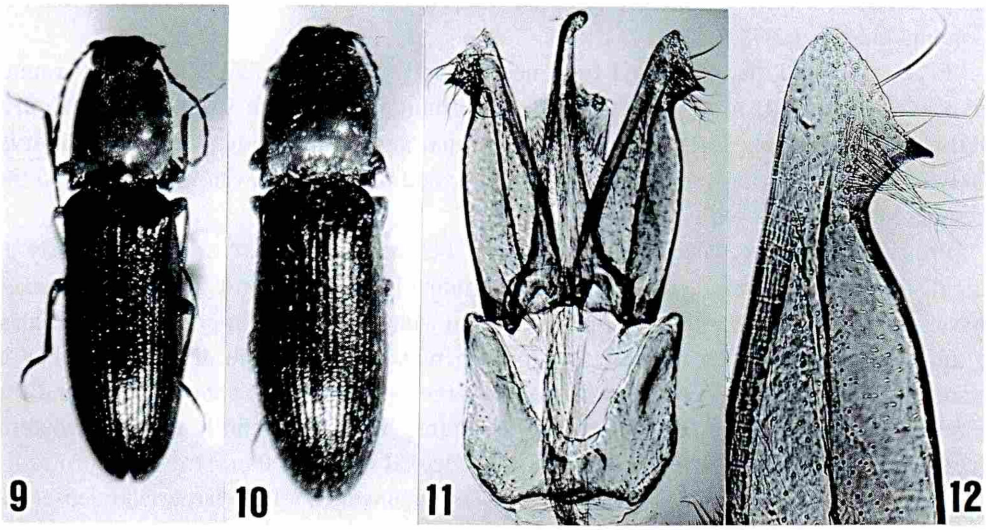
Female, 13.1 mm in length, 3.3 mm in width. More blackish than that of male. Head distinctly broad and relative distance across eyes and each eye width in dorsal view as 100:17 (ca. 5.9 times). Antennae subequal to combined length of head and prothorax or a little less; relative length/width from basal segment to 5th as 45/18, 19/12, 25/13, 32/20 and 32/26 respectively and 4th to 10th segments ill-serrated. Pronotum subspherically convex above, relative median length to width as 108:100; hind angles short, triangular, and parallel-sided each other; punctures distinctly finer and sparser than those on head, and their interstices plainly wider than their diameters in average. Scutellal punctures distinctly fine and rather sparse. Strial interstices of elytra subflattened.

Distribution. Kyushu District (Miyazaki and Kumamoto Prefectures).

Type series. Holotype: ♂, Mt. Takachiho, Miyazaki Prefecture, 10. VII. 1977, M. Yagi leg. Paratypes: 1♂, same data as the holotype; 1♂, Ebino-cho Town, Miyazaki Prefecture, 31. VII. 1958, H. Isozaki leg.; 1♀, Mt. Hakucho, Kumamoto Prefecture, 19. VII. 1983, Y. Sawada leg.

Etymology. The specific name of the present new species is derived from ancient name of an aborigine in the southern area of Kyushu district "Kumaso, 熊襲".

Remarks. This new species is closely allied to *H. desertor* (Candèze, 1873) (*Psephus desertor* Candèze, 1873: 7, Japon), but is distinguished from the latter by the larger body, longer 3rd segment of antennae, the pronotum more sparsely and minutely punctate, the hind angles of pronotum elongate and distinctly divergent postero-laterad, and the apico-lateral expansion of each paramere in aedeagus (figs. 5–7) weakly rounded at apical expansion (in the nominotypical one, clearly rounded and developed apically: fig. 8).



Figs. 9–12. *Hemicrepidius* (*Hemicrepidius*) *desertor taishu* subsp. nov. 9, habitus, male, holotype, 11.0 mm; 10, habitus, female, paratype, 11.8 mm; 11, male genitalia, dorsal view, holotype; 12, ditto, apex of paramere.

Hemicrepidius* (*Hemicrepidius*) *desertor taishu KISHII, subsp. nov.

(Figs. 9–13)

Hemicrepidius (*Heterathous*) *desertor* CANDÈZE, ab. forms. *virens*, *rufoabdominalis* and *kondoi*: KISHII, 1961, Bull. Heian High Sch., Kyoto, 5: 35–36 (Sasu Pass in Is. Tsushima).

Male, 10.1–12.4 mm in length, 2.9–3.3 mm in width; female,11.5–12.8 mm in length, 3.0–3.5 mm in width.

The present new subspecies is distinguishable from the nominotypical one from Japan proper: *Psephus desertor* CANDÈZE, 1873: 7 (Japon) by the following points: 1) body rather thick and more voluminous; 2) metallic greenish or purplish luster on body surface usually more conspicuous; 3) pubescence stout, clearly denser and longer; 4) legs always yellowish. Aedeagus (figs. 11–12) and sclerotic formation on female bursa copulatrix (fig. 13) identical in shape with those of the nominotypical one.

Distribution. Is. Tsushima in Nagasaki Prefecture.

Type series. Holotype: ♂, Mt. Ontake (alt. 490 m), Kamiagata-gun, Is. Tsushima, 9. VII. 1988, N. NARUKAWA leg. Paratypes: 11♂♂, 3♀♀, Mt. Ariake (alt. 100 m), Izuhara-cho Town, Is. Tsushima, 22–23. VII. 1979, A. SEINO leg.; 2♂♂, 1♀, Sasu Pass (alt. 380 m), ditto, 22–28. VII. 1959, T. KISHII leg.

Etymology. The subspecific name of the present new subspecies is derived from ancient name of Is. Tsushima “Taishu, 対州”.

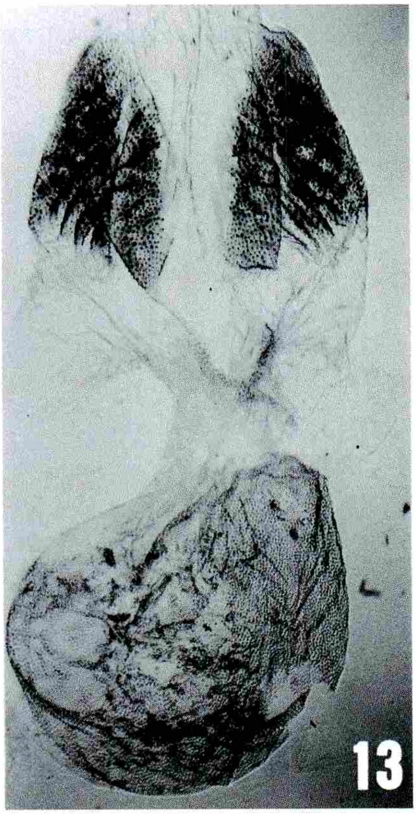

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Fig. 13. *Hemicrepidius* (*Hemicrepidius*) *desertor taishu* subsp. nov., paratype, sclerotic structures of female bursa copulatrix.

要　　約

岸井　尚：九州産ツヤハダコメツキ類の１新種及び２新亜種. ――――屋久島に棲息するクロツヤハダコメツキは本土産の個体群より明らかに大きく肥厚したものが殆どで，体表点刻の状態と雄交尾器に差異点が認められるので別亜種ヤククロツヤハダコメツキとして記載した．なお，高地帯に見られる小型でスリムな個体群は，別種 *H. sinuatus* の亜種 *satouchii* である(KISHII, 1999: 36)．また，宮崎・熊本の両県山地から *H. desertor* に非常によく似た別種が見いだされたので，新種クマソツヤハダコメツキとして記載した．雄交尾器側片の形状に著しい差が認められる。また対馬産の *H. desertor* ヒメクロツヤハダコメツキは短大で著しく毛深い点などの特徴に基づき新亜種ツシマツヤハダコメツキを記載した．

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Ent. Rev. Japan, 56 (2): 51–62, Dec. 30, 2001

Four New Subspecies of *Homotechnes motschulskyi* (FLEUTIAUX, 1902) (Coleoptera: Elateridae) and A New Locality of *H. m. etchu* KISHII, 1996

"Some New Forms of Elateridae in Japan (XXXIV)"

Takashi KISHII

Kamihamuro 1–10, 6–410, Takatsuki, Osaka, 569–1044 Japan

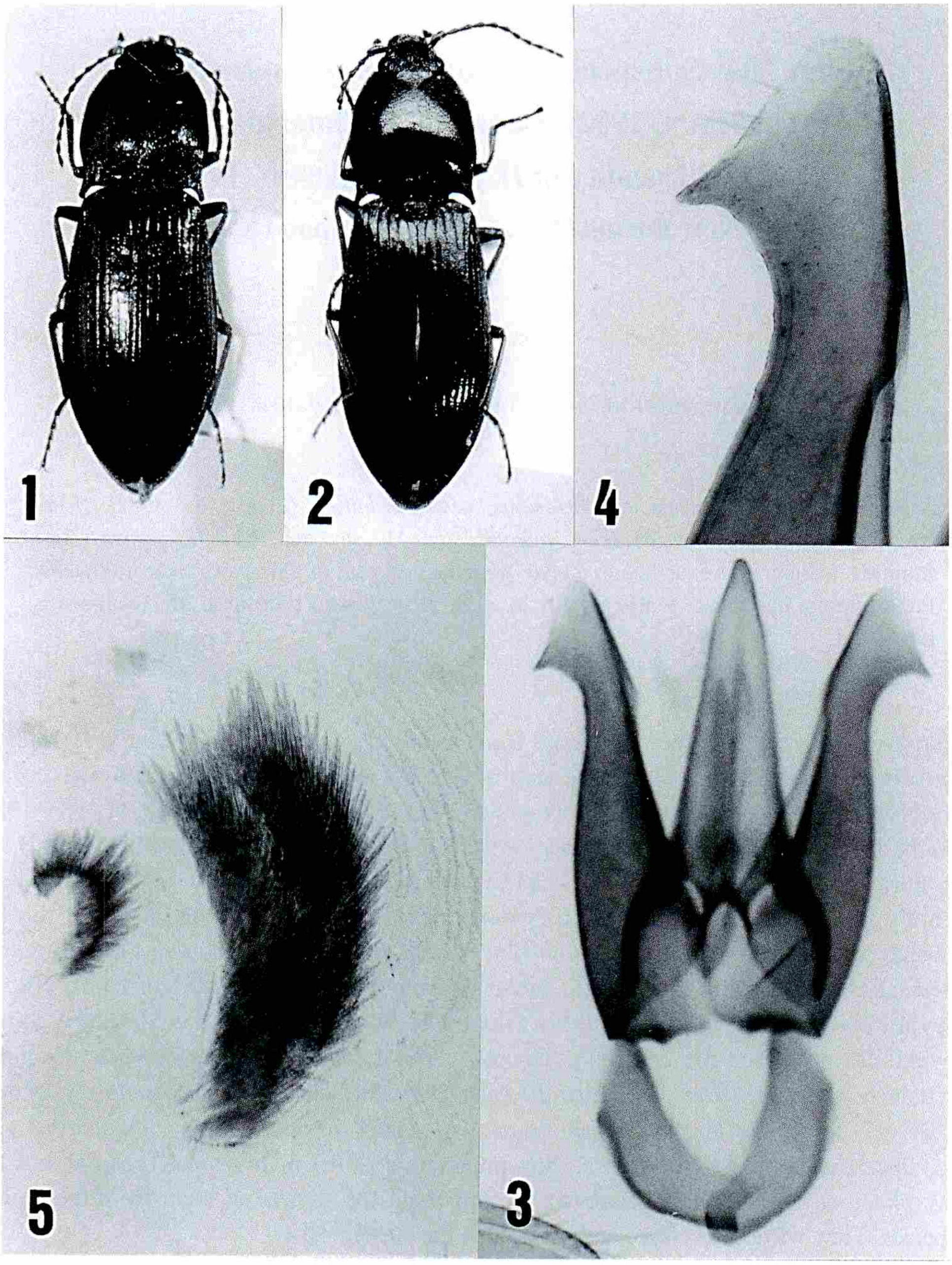
Abstract Four new subspecies of *Homotechnes motschulskyi* (FLEUTIAUX, 1902): *H. m. izucola* from the Izu Peninsula, *H. m. yokozekii* from Mt. Shirouma-dake, *H. m. hirayuanus* from Mt. Norikura-dake, and *H. m. oginoi* from the upstream of Shin-kawa river in Toyama Prefecture are described. A new locality of *H. m. etchu* KISHII, 1996 from Mt. Iwou-zen is reported.

Forty subspecies of the apterous species *Homotechnes motschulskyi* (FLEUTIAUX, 1902) have hitherto been reported from the alpine area of Honshu and Shikoku districts by KISHII and OHIRA (1956), BABA and KISHII (1957), NAKANE (1963), KISHII (1968, 1969, 1979, 1985–1987, 1989a–b, 1990, 1993, 1994, 1996, 1998, 1999), and OHIRA (1968a–c, 1984, 1993–1997). Of these, thirteen subspecies were reported from Chubu and Hokuriku districts.

Lately, I received some interesting specimens of this species collected from the Izu Peninsula, Mt. Shirouma-dake, Mt. Iwou-zen, Hirayu and Arimine belonging to the regions mentioned above through the courtesy of Messrs. Yasuhiko HAYASHI, Shun-ichiro NAOMI, Nobuyuki NARUKAWA, Takahiro OGINO, Hideo OHKAWA, Kengo ONDA, Masahiro SAITO, Hideyuki YOKOZEKI and the late Chuji TANAKA. After a careful examination, it is becoming clear that the specimens consist of five different subspecific members of *motschulskyi*, whose four are new to science and the remaining one is redescribed with notes on its distributional range, since the comparative study on the configuration of the male genital organ and of the thorny plates on female bursa copulatrix are important for separating them from the known subspecies. They will be described and reported in the present paper.

The holotype specimens are deposited in the collection of the Osaka Museum of Natural History, Osaka (OMNH), and paratype ones are preserved in the author's collection.

Before going into further details, I wish to express my deep gratitude to Messrs. N. NARUKAWA (Tsu City), H. OHKAWA (Ashikaga City), M. SAITO (Mikuni Town in Fukui) and H. YOKOZEKI (Yokkaichi City) for their kind offer of many valuable materials and continuous guidance.



Figs. 1–5. *Homotechnes motschulskyi izucola* subsp. nov.: 1, habitus, male, holotype, 11.0 mm; 2, habitus, female, paratype, 11.8 mm; 3, male genitalia, holotype; 4, ditto, apex of paramere; 5, thorny plates on bursa copulatrix, female, paratype.

Homotechnes motschulskyi izucola KISHII, subsp. nov.

(Figs. 1–5)

Length: 11.0–11.2 mm (male) and 11.8 mm (female); humeral width: 3.0–3.1 mm (male) and 3.2 mm (female). Wholly black except for antennae, anterior and posterior angles of pronotum, apical part of elytra, anterior lobe of prosternum and apical two sternites more or less reddish brown and legs yellowish brown, and distinctly shining.

The general outline of the present new subspecies is somewhat similar to subsp. *kai* KISHII, 1996 (south-west of Yamanashi), subsp. *ohbayashii* (OHIRA, 1968) (Mt. Ohyama in Kanagawa) and subsp. *hiranoi* (OHIRA, 1993) (Hakone mountain-range in Kanagawa), but is distinguishable from the latters by the combination of following points: 1) body large, rather stout, subgourd-formed and a little dilated laterad behind the middle of elytra; 2) basal segment of antenna a little expanded apico-anteriad (in *kai* wholly and distinctly dilated); 3) pronotum quadrate, roundly expanded laterad at the middle without medio-longitudinal line nor elevation; 4) relative median length and width of male pronotum in dorsal views as 100:108 (holotype) (*kai*, 100:107, holotype; *hiranoi*, 100:101, measured by the photograph of original description); 5) hind angles of pronotum elongate, rather thick, well-constricted at base, and plainly and divergently protruded postero-laterad; 6) pronotal punctures distinctly finer and sparser than those of subsp. *kai*; 7) scutellum subpentagonal and weakly longer than wide, a little narrower than that of subsp. *kai*; 8) elytral striae finely furrowed; 9) strial intervals of elytra wholly flattened and smooth with punctures a little minuter and sparser than those of subsp. *kai*; 10) male genitalia as figured (fig. 3: holotype; fig. 4, apical part of paramere), median lobe not so narrow and triangular, apico-lateral expansion of paramere rather broad and acutely pointed laterad; 11) thorny plates on female bursa copulatrix as figured (fig. 5) with a small plate plainly sinuated.

Distribution. Mt. Manjiro-dake in Shizuoka Prefecture.

Type series. Holotype: ♂, Mt. Manjiro-dake (alt. 1000 m), Nakaizu-cho, Shizuoka Prefecture, 25. VI. 2000, K. ONDA leg. Paratypes: 1♂, 1♀, same data as the holotype.

Etymology. The new subspecific name refers to the locality of this subspecies, the Izu Peninsula.

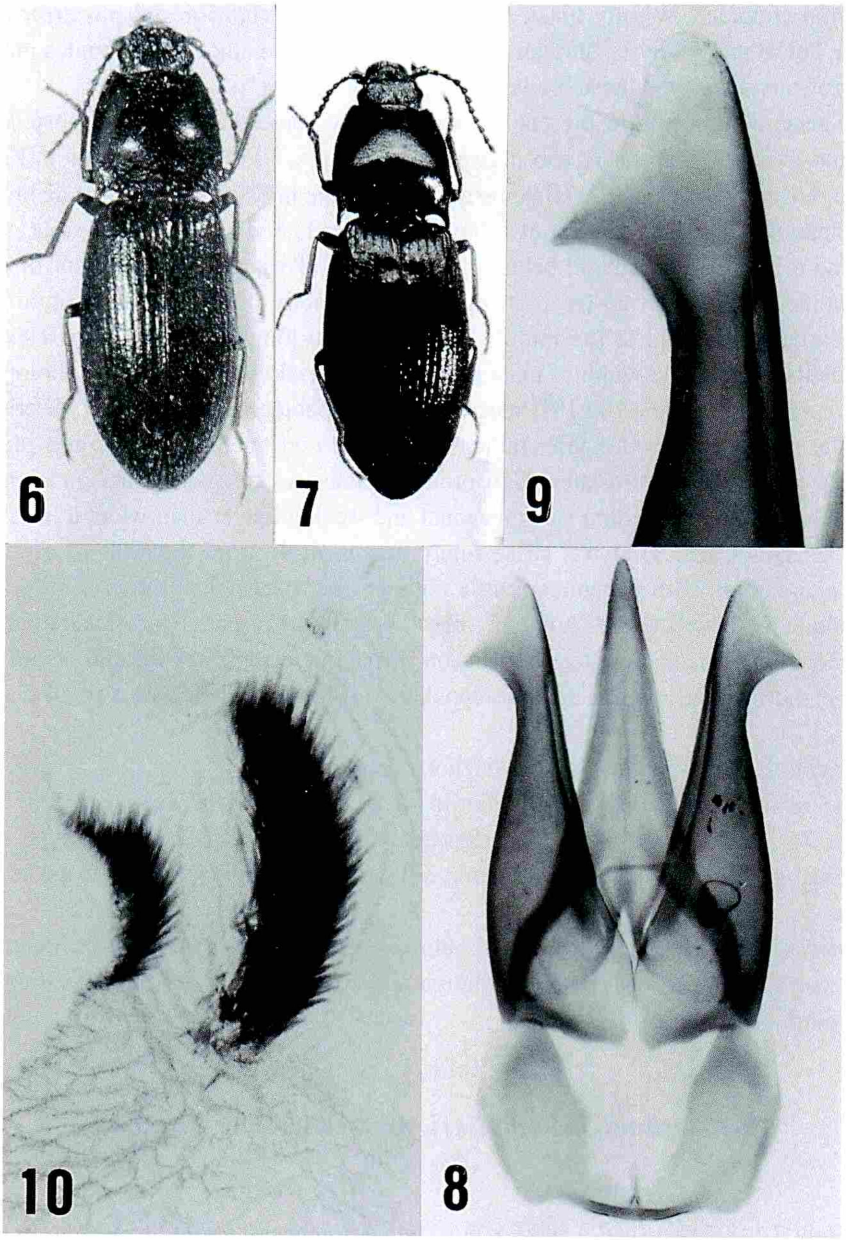
Remarks. This is the first record of this alpine apterous species from the Izu Peninsula, and it seems worth to consider about the evolution and zoogeography of this interesting apterous and polymorphous elaterid.

Homotechnes motschulskyi yokozekii KISHII, subsp. nov.

(Figs. 6–10)

Length: 7.1–8.2 mm (male) and 9.8 mm (female); humeral width: 2.3–2.4 mm (male) and 2.8 mm (female). Black with antennae, pronotal hind corners, elytral apices, anterior lobe of prosternum, propleura, one or two apical sternites and legs more or less brownish, and shining.

This new subspecies is most closely allied to subspp. *alpicola* (KISHII, 1968) (the Asahi-dake Mts. in Niigata), *ikutanii* (NAKANE, 1963) (Mt. Tateyama in Toyama) and *mutsuurai* (NAKANE, 1963) (the Haku-san Mts. in Fukui, Ishikawa and Gifu) on the small size, but is distinguishable from them by the following points: 1) body more black (more or less brownish in *alpicola* and *ikutanii*); 2) rather distinctly gourd-formed and clearly dilated laterad behind the middle of elytra (subparallel-sided or somewhat gourd-shaped in the latters); 3) pronotum quadrate, roundly expanded laterad at the middle, and simply convex (more or less subparallel-sided near the middle in *alpicola* and *mutsuurai*); 4) relative median length and width of male



Figs. 6–10. *Homotechnes motschulskyi yokozekii* subsp. nov.: 6, habitus, male, holotype, 7.95 mm; 7, habitus, female, paratype, 9.8 mm; 8, male genitalia, holotype; 9, ditto, apex of paramere; 10, thorny plates on bursa copulatrix, female, paratype.

pronotum in dorsal views as 100:110 (holotype) (*alpicola*, 100:105, holotype; *ikutanii*, 100:132; *mutsuurai*, 100:122); 5) hind angles of pronotum elongate, rather narrow, feebly constricted at base (rather thick and ill-constricted in *alpicola* and *ikutanii*); 6) pronotal punctures a little finer and sparser than those of the latters; 7) scutellum rather circular and almost flattened; 8) elytral striae finely furrowed (obviously furrowed in *alpicola* and *mutsuurai,* and much more obscurely and somewhat discontinuously furrowed in *ikutanii*); 9) strial intervals of elytra wholly flattened and smooth with punctures fine, sparse and subeven in density and size (a little elevated with punctures sparser and evener in *alpicola*; flattened with punctures finer, denser and evener in *ikutanii*; more or less elevated with punctures rather similar to those of *yokozekii* in *mutsuurai*); 10) male genitalia as figured (fig. 8, holotype; fig. 9, apical part of paramere), median lobe elongate triangular, apico-lateral expansion of paramere rather narrow distinctly and acutely pointed laterad (apico-lateral expansion of paramere not so narrow in *alpicola*; median lobe and paramere broad with apico-lateral expansion of paramere rather short in *ikutanii*; median lobe rather narrow and a little broadened near the middle, apico-lateral expansion triangular, but not elongate with lateral expansion acutely pointed in *mutsuurai*); 11) thorny plates on female bursa copulatrix as figured (fig. 10), with a pair of large plates thick and a small plate weakly sinuated (allied to those of *yokozekii* in *alpicola*; small plate distinctly narrow and sinuated in *ikutanii*; large plates rather narrow and small plate short and narrow in *mutsuurai*).

Distribution. Mt. Shirouma-dake in Nagano Prefecture.

Type series. Holotype: ♂, Shirouma Oh-ike, Mt. Shirouma-dake, Nagano Prefecture, 4–6. VIII. 1995, H. YOKOZEKI leg. Paratypes: 1 ♂, 1 ♀, same data as the holotype.

Etymology. The new name of the present new subspecies is given in dedication to Mr. H. YOKOZEKI in Tsu City, who offered the valuable specimens for my study.

Homotechnes motschulskyi hirayuanus KISHII, subsp. nov.

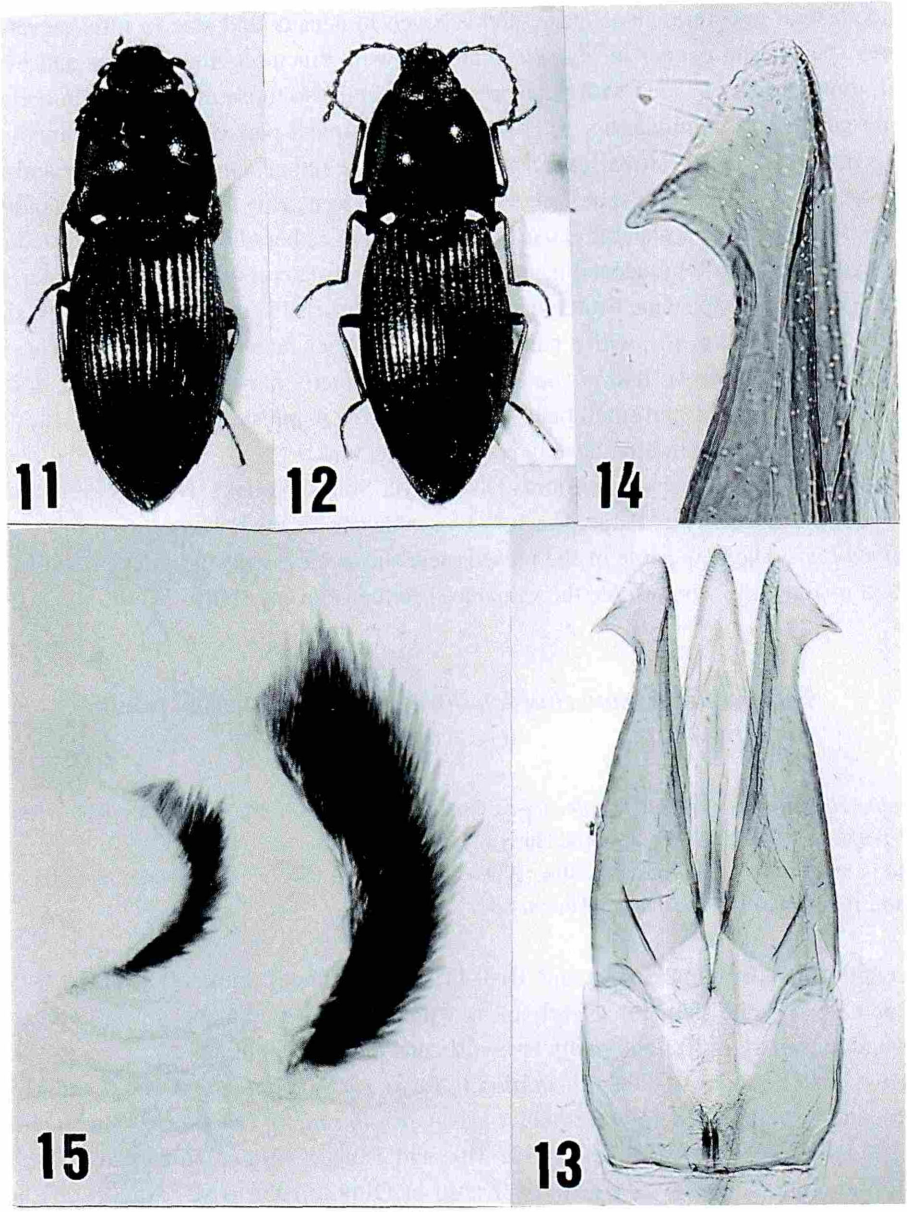
(Figs. 11–15)

Hypolithus (*Hypmoidus*) *motschulskyi fleutiauxi*: OHIRA, 1968b (part.): 30 (Hirayu and Abo-pass); OHIRA and TORIGAI, 1973: 36 (Abou Pass and Hirayu).

Hypolithus motschulskyi fleutiauxi: KISHII, 1989a (part.): 9–12 (Mt. Norikura-dake and Hirayu Spa); KISHII, 1993: 9 (Norikura-dake and Hirayu Spa).

Length: 9.2–10.3 mm (male) and 10.3–11.3 mm (female); humeral width: 2.9–3.4 mm (male) and 3.5–3.6 mm (female). Clearly black with antennae, hind angles of pronotum, ventral surface and legs more or less and partly brownish, and distinctly shining.

Most closely allied to subsp. *fleutiauxi* (OHIRA, 1968) (Kamikochi and Tokugo Pass in Nagano), and in outline generally resembles subsp. *fukuinosaitoui* (KISHII, 1987) (Mt. Kammuri in Fukui), subsp. *babai* (KISHII, 1957) (Iide Mts. and Tainai valley in Niigata and Mt. Eboshi-dake in Yamagata), subsp. *echigoanus* (KISHII et OHIRA, 1956) (Mt. Amakazari and Mt. Yukikura-dake in Niigara and Mt. Togakushi in Nagano) and subsp. *ohmi* KISHII, 1996 (Ohmi-hashidate in Niigata), but the present new subspecies is distinguishable from them by the combination of following points: 1) dorsal surface of head, pronotum and elytra much more blackish with anterior corners of pronotum less reddish, hind corners of pronotum obscurely reddish and elytral apices more or less paler (dorsal surface more or less brownish in *fleutiauxi*, *fukuinosaitoui*, *ohmi* and *babai*); 2) outline broad and plainly gourd shaped, and well dilated laterad behind the middle of elytra (rather elongate and subparallel-sided in *echigoanus* and *ohmi*); 3) pronotum broad and quadrate, less roundly expanded laterad at the middle, and simply convex above (generally having a medio-longitudinal line or elevation in *fleutiauxi*); 4) relative median length and width of male pronotum in dorsal views as 100:124 (holotype) (*fleutiauxi*, 100:132; *fukuinosaitoui*, 100:117, holotype; *babai*, 100:118; *echigoanus*, 100:108; *ohmi*,



Figs. 11–15. *Homotechnes motschulskyi hirayuanus* subsp. nov.: 11, habitus, male, paratype, 10.2 mm; 12, habitus, female, paratype, 10.7 mm; 13, male genitalia, paratype; 14, apex of paramere, paratype; 15, thorny plates on bursa copulatrix, female, paratype.

100:121, holotype); 5) hind angles of pronotum thick, rather short, entirely parallel to each other at lateral sides, not sinuated at base with apices obtusely pointed (a little longer in *fleutiauxi*; elongate and more or less sinuated at base in *fukuinosaitoui*, *echigoanus* and *ohmi*); 6) pronotal punctures small, sparse and irregularly punctured (more larger and denser in *fleutiauxi*, *fukuinosaitoui* and *ohmi*; more finer and sparser in *babai* and *echigoanus*); 7) scutellum subpentagonal, flattened, and plainly declivous antero-interiad; 8) elytral striae more finely furrowed; 9) strial intervals of elytra less elevated, generally smooth but weakly sculptured near humeri, with punctures obviously fine and a little dense; 10) male genitalia as figured (fig. 13, paratype; fig. 14, apical part of paramere), median lobe triangular, gently narrowed apically from base, with apex obtusely pointed; apico-lateral expansion of paramere rather broad and acutely protruded laterad, with apical end rounded (apico-lateral expansion of paramere shortly protruded laterad in *fleutiauxi*; expansion much longer in *fukuinosaitoui*); 11) thorny plates on female bursa copulatrix as figured (fig. 15) with a pair of large plates thick and a small plate clearly sinuated (small plate weakly sinuated in *fleutiauxi*; small plate wide and more strongly sinuated in *fukuinosaitoui*).

Distribution. Mt. Norikura-dake, Hirayu Pass, Abou Pass and Hirayu Spa in Gifu Prefecture.

Type series. Holotype: ♂, Mt. Norikura-dake (alt. 1500–1700 m), near Hirayu Pass, Gifu Prefecture, 9. VII. 1988, M. SAITO leg. Paratypes: 3♂♂, 1♀, same data as the holotype; 2♀♀, ditto, 30. VII. 1988, M. SAITO leg.; 1♀, Hirayu Spa, Gifu Prefecture, 7–8. I. 1980, S. NAOMI leg.

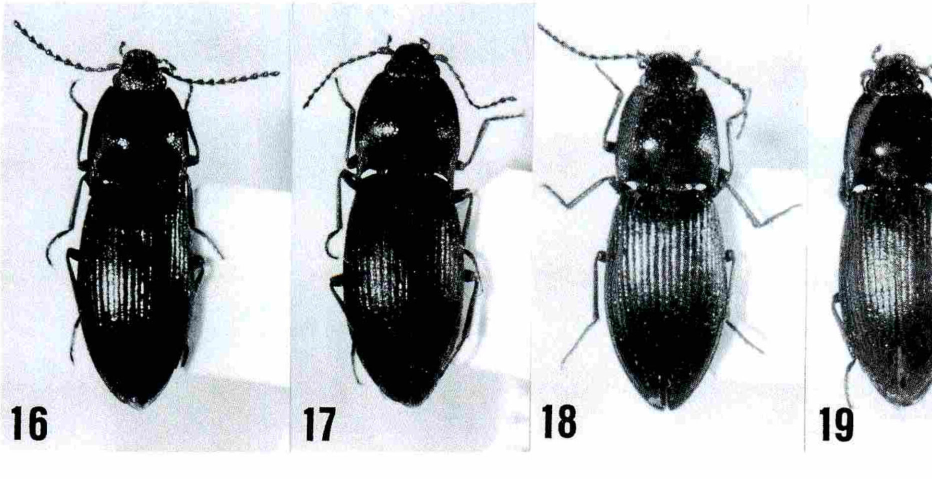
Etymology. The present new subspecies is named after the type locality, whose habitat includes the famous spa "Hirayu-onsen".

Homotechnes motschulskyi oginoi KISHII, subsp. nov.

(Figs. 16–17 and 20–22)

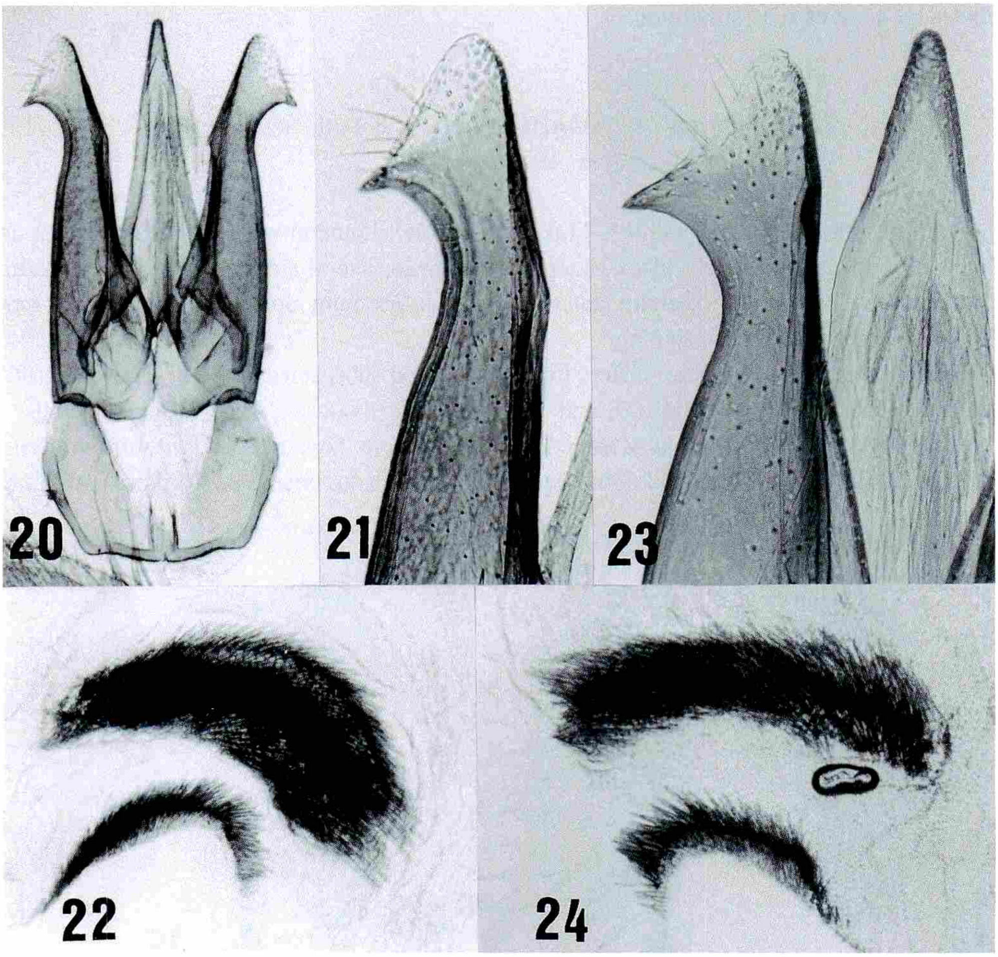
Length: 9.8 mm (male) and 9.5–11.6 mm (female); humeral width: 2.6 mm (male) and 3.2–3.4 mm (female). Entirely black except for antennae, lateral sides of pronotum including both the corners, apical part of elytra, anterior lobe of prosternum, apical sternite and legs more or less reddish brown, and subshining.

The present new subspecies differs from some allied subspecies: *ikutanii* (NAKANE, 1963) (Mt. Tate-yama in Toyama) (figs. 18 and 19), *mutsuurai* (NAKANE, 1963) (Haku-san Mts. in Fukui, Ishikawa and Gifu), *etchu* KISHII, 1996 (Takaoka in Toyama), *fukuinosaitoui* (KISHII, 1987) (Mt. Kammuri in Fukui and Gifu) and *hirayuanus* KISHII, nov. (Mt. Norikura and Hirayu



Figs. 16–19. 16 and 17, *Homotechnes motschulskyi oginoi* subsp. nov.: 16, habitus, male, holotype, 9.8 mm; 17, ditto, female, paratype, 10.7 mm. Figs. 18 and 19. *Homotechnes motschulskyi ikutanii* (NAKANE, 1963): 18, habitus, male, 8.5 mm, Raicho-sawa of Mt. Tate-yama; 19, ditto, female, 9.5 mm, Mt. Tate-yama.

Spa in Gifu), but is distinguishable from them by the combination of following points: 1) body medium-sized (plainly small-sized in *ikutanii*; large-sized in *etchu*); 2) head, pronotum and elytra much more blackish with anterior and posterior corners of pronotum more or less reddish brown (dorsal surface wholly more or less brownish black in *ikutanii* and *etchu*); 3) outline not so broad, rather elongate or subgourd-shaped, less dilated laterad behind the middle of elytra, but not parallel-sided (generally well gourd-shaped in *mutsuurai* and *hirayuanus*); 4) pronotum broad and quadrate, roundly expanded laterad (male) and subparallel-sided (female), gently and simply convex above, but holotype and a paratype specimens having an obscure vestige of medio-longitudinal line (more or less parallel-sided in both the sexes in *mutsuurai*, *etchu* and *fukuinosaitoui*); 5) relative median length and width of male pronotum in dorsal views as 100:110(holotype) (*ikutanii*, 100:132; *mutsuurai*, 100:122; *etchu*, 100:104; *fukuinosaitoui* , 100:117, holotype; *hirayuanus*, 100:124, holotype); 6) hind angles elongate, narrow, well-developed posteriad, rather parallel-sided to each other (male) and hardly divergent postero-laterad (female), less sinuated at base (male) and rather plainly sinuated (female) (short and thick in *hirayuanus*); 7) pronotal punctures distinctly large, dense and unevenly punctate, and



Figs. 20–22. *Homotechnes motschulskyi oginoi* subsp. nov.: 20, male genitalia, holotype; 21, apex of paramere, ditto; 22, thorny plates on bursa copulatrix, paratype. Figs. 23 and 24. *Homotechnes motschulskyi ikutanii* (Nakane, 1963): 23, apical part of aedeagus, Mt. Tate-yama; 24, thorny plates on bursa copulatrix, Mt. Tate-yama.

their average distance among punctures subequal or a little more than puncture diameter (obviously small sparse and their distance among ones distinctly wider than their diameter in *etchu*, *mutsuurai* and *hirayuanus*); 8) scutellum subcircular, flattened, and gently declivous antero-interiad; 9) elytral striae distinct and deeply furrowed; 10) strial intervals of elytra moderately elevated, smooth, with punctures fine and less dense; 11) male genitalia as figured (fig. 20, holotype; fig. 21, ditto, apical part of paramere), median lobe triangular, gently narrowed apically from base, with apex obtusely pointed; apico-lateral expansion of paramere rather small, acutely pointed postero-laterad, with apical end rounded (*cf. ikutanii* in fig. 23, apical part of aedeagus); 12) thorny plates on female bursa copulatrix as figured (fig. 22) with a pair of large plates thick and a small plate narrow and distinctly sinuated (*cf. ikutanii* in fig. 24).

Distribution. Up-stream of Shinkawa River, Toyama Prefecture.

Type series. Holotype: ♂, Up-stream of Shin-kawa River (alt. 1500 m), Daisen-cho Town, Toyama Prefecture, 16. VIII. 1995, T. OGINO leg. Paratypes: 1♀, same data as the holotype; 2♀♀, ditto (alt. 1450 m), 29. VII. 1995, T. OGINO leg.; 1♀, Arimine, Daisen-cho Town, Toyama Prefecture, 24. VI. 1979, T. TANAKA leg.

Etymology. The subspecific name of the present new subspecies is dedicated to Mr. Takahiro OGINO in Osaka City.

Remarks. In 1983, I received a female specimen of this species from Arimine through the courtesy of the late Mr. Chuji TANAKA in Unazuki Town of Toyama Prefecture for the determination. At that time, I identified the elaterid as subsp. *ikutanii* with some suspicion, but it becomes clear as the result of the present study that the subspecific group of *H. motschulskyi* inhabiting on the source zone of the Shin-kawa (including Arimine and Mt. Yakushi-dake) differs doubtlessly from subsp. *ikutanii* inhabiting the Tate-yama Mts. and the neighborhood. They are rather close to subsp. *mutsuurai* from the Haku-san Mts., and can be distinguished also from the latter by the characteristics described above.

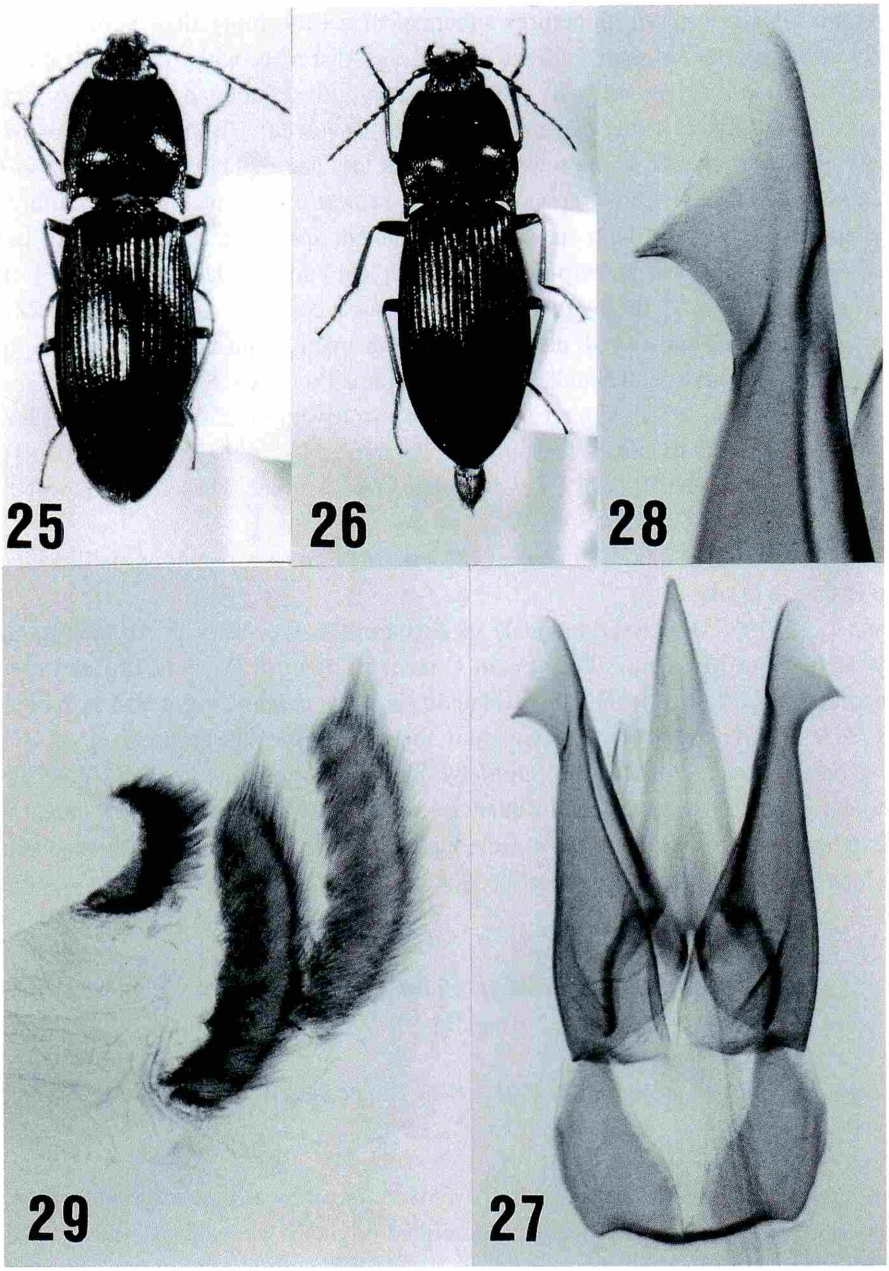
Homotechnes motschulskyi etchu KISHII, 1996, new habitat

(Figs. 25–29)

Homotechnes motschulskyi etchu KISHII, 1996: 16–17 (Riverside of the Sho-kawa in Takaoka City, Toyama).

This subspecies from Takaoka City in Toyama Prefecture was first described by the author (1996) based on only one female specimen (described originally as male specimen, but this is a misjudgement by the inadvertent error and correctly is female as the explanation of fig. 53 in the original description). Lately, I received some specimens of *H. motschulskyi* from Mt. Iou-zen in Toyama and Ishikawa Prefectures through the kind courtesy of Mr. H. OHKAWA (Ashikaga City). Though their structures somewhat resemble those of subsp. *mutsuurai* from the Haku-san Mts. in Ishikawa, Fukui and Gifu Prefectures, they allied more to the present subspecies in important characteristics.

In the general outline, this subspecies is similar to subspp. *mutsuurai* (NAKANE, 1963) (the Haku-san Mts.), *fukuinosaitoui* (KISHII, 1987) (Mt. Kammuri), and the preceding subspecies: *oginoi* nov. (Up-stream of Shinkawa River and Arimine), but is distinguished from them by the following points: 1) length: 10.1–12.6 mm (male) and 12.1–13.2 mm (female); humeral width:



Figs. 25–29. *Homotechnes motschulskyi etchu* KISHII, 1996: 25, habitus, male, 11.1 mm, Mt. Iou-zen; 26, habitus, female, 12.1 mm, ditto; 27, male genitalia; 28, apex of paramere; 29, thorny plates on bursa copulatrix.

2.8–3.5 mm (male) and 3.4–3.5 mm (female); 2) holotype specimen (female, Takaoka) generally reddish brown with pronotal disc and prosternum a little darker, but the specimens from Mt. Iou-zen (6♂♂, 4♀♀) entirely black except for base of each antennal segments, anterior and posterior angles of pronotum, apical part of elytra, anterior lobe of prosternum, apical sternite and legs more or less obscurely reddish, and shining; 3) outline a little broad and elongate, subparallel-sided or hardly dilated laterad behind the middle of elytra; 4) pronotum quadrate, parallel-sided at the middle, then roundly and gradually convergent anteriad, more or less sinuated before hind angles, simply and gently convex above without any medio-longitudinal line nor impression; 5) relative median length and width of pronotum in dorsal views as 100:104 (male) and 100:120 (female, holotype); 6) hind angles triangular, less thick and elongate, hardly divergent postero-laterad (male) and subparallel to each other (female); 7) pronotal punctures distinctly minute and sparse at the middle, more or less becoming denser and larger laterad, and their average distance among punctures clearly wider than puncture diameter at the middle, but gradually closer by closer mutually laterad and partly reticulated to each other on the lateral margin; 8) scutellum subpentagonal, flattened and a little declivous antero-inferiad; 9) elytral striae clear and more deeply grooved; 10) strial intervals elevated and smooth, with punctures fine and rather dense; 11) male genitalia as figured (fig. 27, aedeagus; fig. 28, ditto, apical part of paramere), median lobe triangular, gently narrowed apically from base, with apex subacutely pointed; apico-lateral expansion of paramere distinctly elongate, acutely pointed postero-laterad; 12) thorny plates on female bursa copulatrix as figured (fig. 29) with a pair of large plates and a small plate distinctly thick, and the latter obviously sinuated.

Distribution. Takaoka City, Toyama Prefecture and Mt. Iou-zen, Ishikawa and Toyama Prefectures.

Specimens examined. Holotype, ♀, Takaoka City, Toyama Prefecture, 20.VI. 1957, S. Kitamura leg.; 6♂♂, 4♀♀, Mt. Iou-zen (alt. 800 m), Kanazawa City, Ishikawa Prefecture, 25. V. 2000, K. Onda leg.

Remarks. Though all the specimens from Mt. Iou-zen are much different to the holotype specimen in general coloration at first sight, they can be recognized as the subsp. *etchu* on the structures cited above, especially the homogeneous shape of the thorny plates on bursa copulatrix of female genitalia have the considerable taxonomic validity.

要約

岸井　尚：ミヤマヒサゴコメツキの4新亜種と新分布地. ———— *Homotechnes motschulskyi* ミヤマヒサゴコメツキは下翅が縮小退化し飛翔不能で, 一般に本州などの高地帯に分布する. 隔離的な棲息域をもつためか, 地域的な形態変化が著しく, 40を越える亜種が報告されているが, 今回記載する4亜種はこれまでに分布の知られていなかった新亜種個体群と認められるので新名を付した。それぞれイズミヤマヒサゴコメツキ, シロウマミヤマヒサゴコメツキ, ヒラユミヤマヒサゴコメツキ, アリミネミヤマヒサゴコメツキの和名とする。また, 富山県高岡市から1頭の雌個体（原記載の雄表示は誤り）で記載されたエッチュウミヤマヒサゴコメツキは, 石川·富山県境にある医王山から得られた個体群と一致する亜種と認め報られた。

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Ent. Rev. Japan, 56 (2): 63–66, Dec. 30, 2001

Donacia bicoloricornis CHEN from Far East Russia, with Records on several *Donacia* from Primorskiy Province (Coleoptera: Chrysomelidae: Donaciinae)

Masakazu HAYASHI

767–45–101, Ôhara, Sanda, 669–1515 Japan

Abstract *Donacia bicoloricornis* CHEN is reported for the first time from Primorskiy Province, Far East Russia that is commonly found on emergent plants, *Sparganium* and *Typha*.

The Russian Far East is one of the most important region for biogeographical study on Japanese Donaciinae. MEDVEDEV (1992) listed 20 species from Primorskiy Province who recognized nine Japanese species from the region. I had an opportunity to visit Primorskiy Prov., Far East Russia in August, 2001 and obtained five *Donacia* species. Among them, *Donacia bicoloricornis* CHEN is firstly recorded from Far East Russia. Its record and other records are reported in this paper.

I gratefully acknowledge to Dr. Victor N. KUZNETSOV (Institute of Biology and Soil Science, Far Eastern Branch of Russian Academy of Science, Vladivostok) and Mr. Shigehiko SHIYAKE (Osaka Museum of Natural History) for supporting my field survey.

Donacia (*Donaciomima*) *bicoloricornis* CHEN, 1941

(Fig. 1)

Records: 14♂♂, 1♀, nr. Cheringovka NW 10 km, along R. Ilistaya, Chernigovsky district, 12. VIII. 2001, M. HAYASHI leg.; 11♂♂, 9♀♀, nr. Gribnoye N 4 km, Chernigovka district, 12. VIII. 2001, M. HAYASHI leg.; 7♂♂, 2♀♀, nr. Cherinigovka W 5 km, 12. VIII. 2001, M. HAYASHI leg; 2♂♂, 1♀, nr. Spassk-Dal'ny WNW 15 km, 13. VIII. 2001, M. HAYASHI & V. N. KUZNETSOV leg.

Notes: This species is commonly found on emergent plants, *Sparganium* and *Typha* at marshes and small lakes in Chernigovsky district (Figs. 2, 3).

Distribution: Japan (Honshu); China (Heilongjiang, Beijin, Hebei, Jiangsu, Zhejiang); Taiwan; Far East Russia (South Primorskiy) (TAN *et al.*, 1985; KIMOTO and TAKIZAWA, 1994; present report).

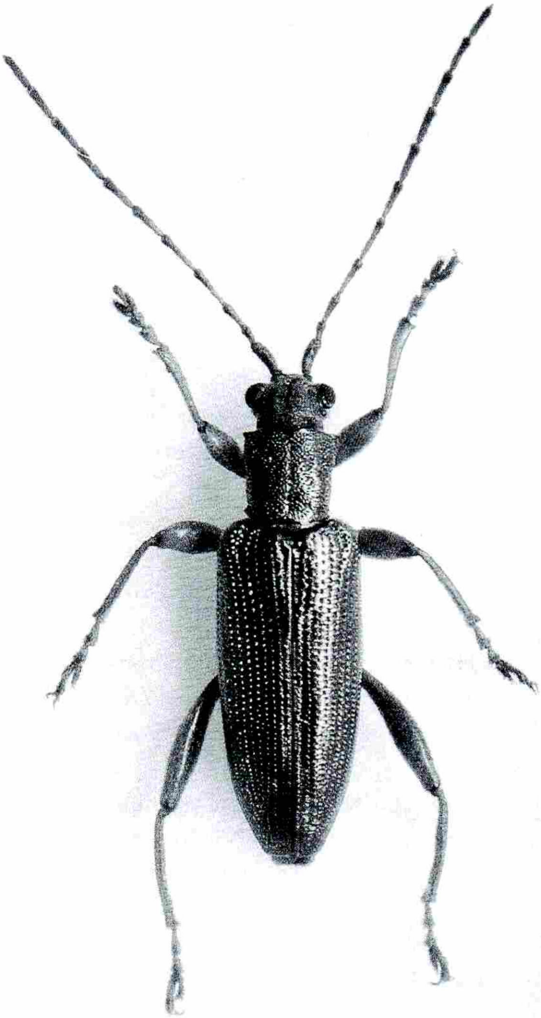


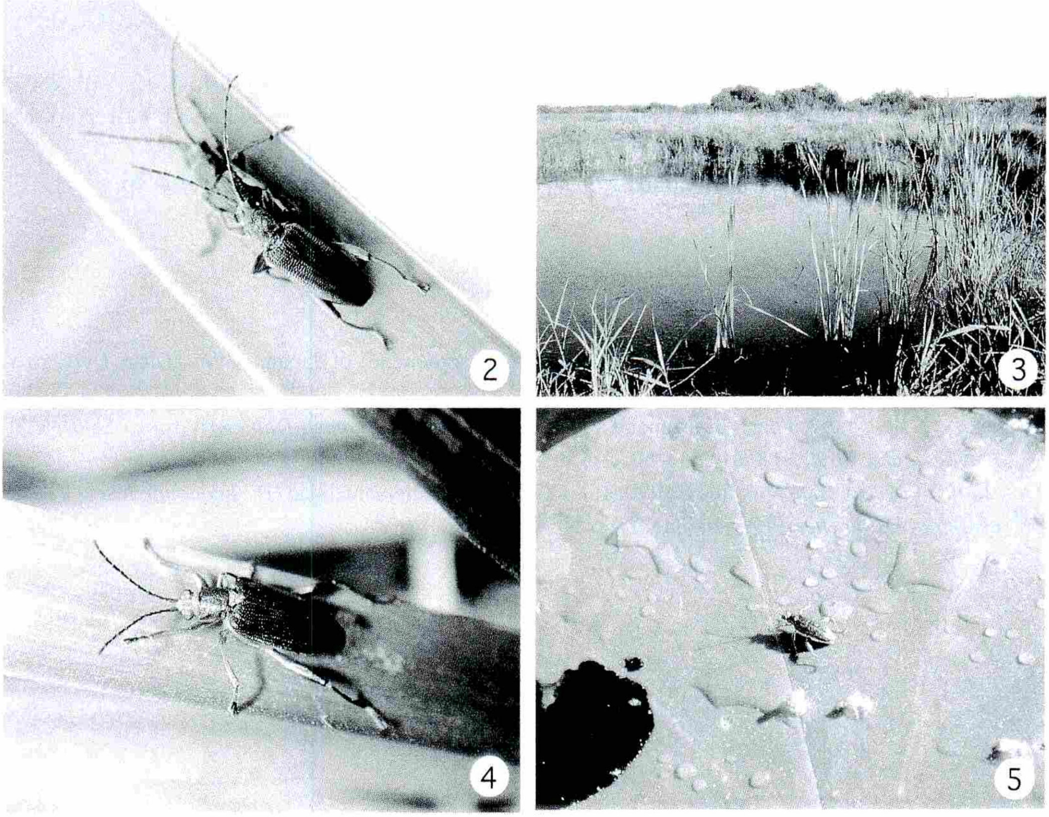
Fig. 1. *Donacia bicoloricornis* CHEN, male from nr. Gribnoye N 4 km, Chernigovka district.

Records on several *Donacia* from Primorskiy Province

Donacia* (*Donaciomima*) *aquatica (LINNAEUS, 1758)

Records: 2♂♂, Gakelev Stream, nr. village Primorsky N 5km, Khasansky district, 11. VIII. 2001, M. HAYASHI leg.

Notes: This species was obtained from *Sparganium emersum*.



Figs. 2–5. *Donacia* spp.; 2, Pair of *D. bicoloricornis* on leaf of *Typha* (nr. Gribnoye N 4 km); 3. Small lake with *Typha* and *Potamogeton* (nr. Cheringovka NW 10 km, along R. Ilistaya). *D. bicoloricornis* and *D. provostii* lives in the lake; 4. *D. sparganii gracilipes* on leaf of *Sparganium emersum* (Gakelev Stream, nr. village Primorsky N 5 km); 5. *D. lenzi* on floating leaf of *Nymphaea tetragona* (nr. Cherinigovka W 5 km).

Donacia* (*Donaciomima*) *sparganii gracilipes JACOBY, 1885

Records: 1♂, nr. village Primorsky E 1 km, Khasansky, 10. VIII. 2001, S. SHIYAKE leg.; 24♂♂, 16♀♀, Gakelev Stream, nr. village Primorsky N 5 km, Khasansky district, 11. VIII. 2001, M. HAYASHI leg.

Notes: This species was obtained from *Sparganium emersum* (Fig. 4).

Donacia* (*Cyphogaster*) *lenzi SCHÖNFELDT, 1888

Records: 3♂♂, 4♀♀, nr. Cherinigovka W 5 km, 12. VIII. 2001, M. HAYASHI leg.

Notes: This species was obtained from *Nymphaea tetragona* (Fig. 5).

Donacia (*Cyphogaster*) *provostii* FAIRMAIRE, 1885

Records: 1♀, nr. Cheringovka NW 10km, along R. Ilistaya, Chernigovsky district, 12. VIII. 2001, M. HAYASHI leg.; 4♂♂, 1♀, Khanka Lake, SE coast, nr. Spassk-Dal'ny WNW 20 km, 13. VIII. 2001, M. HAYASHI leg.

Notes: This species was obtained from *Nymphoides peltata* and *Potamogeton* sp.

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Ent. Rev. Japan, 56 (2): 67–68, Dec. 30, 2001

Fossil Record of *Liatongus phanaeoides* (WESTWOOD) (Coleoptera: Scarabaeidae: Scarabaeinae) from the Lower Pleistocene in Saitama Prefecture, Japan

Masakazu HAYASHI

767–45–101, Ôhara, Sanda, 669–1515 Japan

Abstract *Liatongus phanaeoides* (WESTWOOD) is reported from the first time from the Lower Pleistocene Bushi Formation at Iruma City, Saitama Prefecture, Japan.

Three coprophagous Scarabaeidae are known from the Lower Pleistocene Bushi Formation in Iruma City, Saitama Prefecture: *Geotrupes* sp., *Onthophagus viduus*, *Aphodius* sp. (HAYASHI, 1996; HAYASHI and HARUSAWA, 1999). The author newly obtained coprophagous Scarabaeidae from the formation. A fossil specimen is identified with *Liatongus phanaeoides* (WESTWOOD). It is the first record of this species from the Pleistocene.

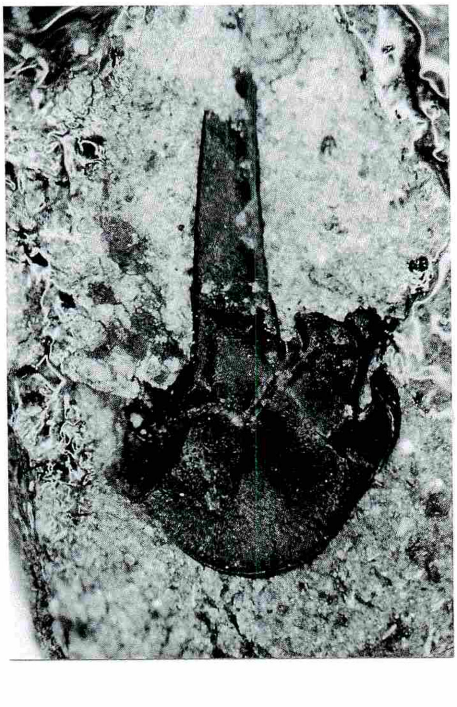

Fig. 1. Fossil head of *Liatongus phanaeoides* (WESTWOOD) from the Bushi Formation.

Liatongus phanaeoides (WESTWOOD)

(Japanese name: Tsuno-kogane)

(Fig. 1)

Material: Head, male (in coll. of the Osaka Museum of Natural History).

Description: Head entirely black; general shape oblong; outline of clypeus edged, front rounded, both side more or less prominent, apex rounded; eye slender, and oblique against median line; vertex with long horn extending for hind; clypeus sparsely punctate.

Measurements: length 2.2 mm, width 2.5 mm; length of horn 2.5 mm+.

Locality and stratigraphic horizon: Lowest member of the Bushi Formation at river bed of the Iruma River, Noda, Iruma City, Saitama Prefecture, Honshu, Japan. The fossil age is ca. 1.7–1.6 Ma.

Fossil range: Early Pleistocene to Recent.

Modern distribution: Hokkaido, Honshu, Shikoku, Kyushu, Sado Is., Tsushima Is.; Korea, China, Taiwan, Indochina, Myanmar, India (MASUMOTO, 1985).

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Ent. Rev. Japan, 56 (2): 69–72, Dec. 30, 2001

Two Types of Male Feeding Behavior in the Horned Beetle *Trypoxylus dichotomus septentrionalis* (Coleoptera: Scarabaeidae)

Yutaka IGUCHI

Laboratory of Biology
Yamashita-cho 1–10–6, Okaya City, Nagano Pref., 394–0005 Japan

Abstract Males of *Trypoxylus dichotomus septentrionalis* show 2 types of feeding behavior, namely feeding behavior with hindleg swinging behavior and feeding behavior without hindleg-swinging behavior. I kept males and females together in small containers and observed these 2 types of male feeding behavior. When females were absent at feeding sites, males showed both types of feeding behavior nearly equally, that is, at random. In hindleg-swinging behavior, males shook off urine from their abdomens. The urine sometimes fell on females, but they showed no reaction. When showing hindleg-swinging behavior, males sometimes attacked females and kept the females away from the feeding sites. When not showing hindleg-swinging behavior, males did not attack females, who fed together. Hindleg-swinging behavior may be related to fight for food rather than pheromone emission toward females.

Introduction

Males of *Trypoxylus dichotomus septentrionalis* (KÔNO) often swing their hindlegs in feeding at sap sites. This behavior was first documented by IGUCHI (1997) as "hindleg-swinging behavior" (Fig. 1). Later, HAMANISHI & MIYAKE (1998) observed that males shook off urine from their abdomen by this behavior, and suggested that this behavior might be related to the emission of pheromone.

My recent experiment on this beetle revealed that when showing hindleg-swinging behavior, even small males were more aggressive than usual (IGUCHI, 2001). Through this experiment, I observed two types of male feeding behavior, namely feeding type with hindleg-swinging behavior and feeding type without hindleg-swinging behavior. However, I did not discuss why males show these two types of feeding behavior. In the present study, I observed males and females feeding at sap sites under laboratory conditions and examined the influence of the two types of male feeding behavior on female behavior. In this paper, I discuss whether male hindleg-swinging behavior is closely related to pheromone emission or intraspecific fight for food.

Materials and Methods

Seven transparent plastic boxes (20 cm × 12.5 cm × 12 cm deep) filled with moist humus

	Females	
	present	absent
Male feeding type		
with hindleg-swinging behavior	2	52
without hindleg-swinging behavior	14	55

Table 1. Frequency of two types of male feeding behavior observed when females were present at the feeding sites and when females were absent there.

to a depth of 2 cm were used as cages for this experiment. A wood block was put in each box, and jelly consisting mainly of brown sugar was put as food on the top of the wood block. A virgin male and a virgin female were then put in each box.

All the boxes were placed in a room where light and temperature fluctuated in room condition. Observations were made at 0, 3, 6, 9, 12, 15, 18 and 21 o'clock and the number of males showing each type of feeding behavior and the number of females feeding were recorded. Observations at night were made under an artificial light of 10–20 lux. Each experiment was carried out for 8 days. After the 1st day, food was added between 0:00 and 0:30.

Results and Discussion

As shown in Table 1, males showed both types of feeding behavior more frequently when females were absent at feeding sites than present. This difference was highly significant for both types of feeding behavior (Binomial test, $P < 0.0001$ for both types). This result was consistent with the observation of HAMANISHI & MIYAKE (1998). However, the important point in the present study was that when females were absent at feeding sites, males showed both types of

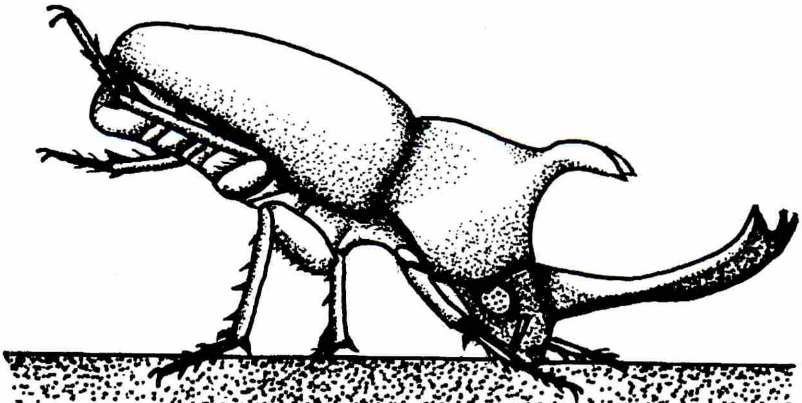

Fig. 1. Lateral view of a male *Trypoxylus dichotomus septentrionalis* showing hindleg-swinging behavior.

feeding behavior nearly equally (Binomial test, $P > 0.8$). That is, both types happened at random despite the fact that males and females coexisted in the small containers. In this situation, urine splashed by male hindleg-swinging behavior sometimes happened to fall on females. Nevertheless they showed no reaction. These results suggest that hindleg swinging behavior may not be pheromone-emitting behavior to attract females. In hindleg-swinging behavior, males were so aggressive that they sometimes attacked females and kept the females away from the feeding sites. Therefore, hindleg-swinging behavior may be related to fight for food rather than pheromone emission toward females. Hamanishi & Miyake (1998) observed that when two or more males were feeding together, they showed hindleg-swinging behavior more frequently. Their observation may also suggest the connection between hindleg-swinging behavior and male fight for food. However, there is no statistical data to prove this connection at present.

In the present study, males frequently courted females feeding. As shown in Table 1, when females were present at feeding sites, males fed without hindleg-swinging behavior more frequently than with hindleg-swinging behavior (Binomial test, $P < 0.005$). As pointed out by Obata & Hidaka (1983), males were not aggressive toward females feeding motionlessly. In the present study, therefore, males may rarely have shown hindleg-swinging behavior toward females feeding. I repeatedly observed that males did not show hindleg-swinging behavior while courting females. This means that hindleg-swinging behavior is not included in the sequence of male courtship behavior as described by Iguchi (1996).

要約

井口　豊：カブトムシ雄における2種類の摂食行動．———— カブトムシ雄は2種類の摂食行動を示す．すなわち，後脚振行動を伴う場合と伴わない場合である．本研究では7個の小型容器で雄雌1ペアずつ飼育し，雄の2種類の摂食行動と雌の摂食行動の関連を調べた．その結果，小型容器に雄雌が共存しているにもかかわらず，雌が餌場にいない時，雄は2種類の摂食行動をほぼ等しく示した．後脚振行動の時，雄は尿を振り払い，それが時々雌にかかったが，雌は何の反応も示さなかった．これらのことから，後脚振行動はカブトムシ雌を引き寄せるフェロモン散布行動ではないと推察された．後脚振行動の時，雄は雌を攻撃し餌場から排除することがあった．後脚振行動は雌に対するフェロモン散布行動というよりも，むしろ餌をめぐる闘争行動と関連があるかもしれない．雌が餌場にいる時，後脚振行動を伴う摂食行動は，後脚振行動を伴わない摂食行動ほど頻繁には現れなかった．これは，静止して摂食している雌を雄が攻撃しないことと関連があるのかもしれない．

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Ent. Rev. Japan, 56 (2): 73, Dec. 30, 2001

Note on *Stenus hiroyukii* PUTHZ (Coleoptera, Staphylinidae)

Volker PUTHZ

c/o Limnologische Fluss-Station, MPI-Limnologie, Damenweg 1, D–36110 Schlitz, Germany

Abstract Additional remarks on *Stenus* (*Nestus*) *hiroyukii* PUTHZ from the Nagano Pref., Honshu, Japan are given.

In my paper on *Stenus hiroyukii* (Spec. Publ. Japan. Coleopt. Soc., Osaka, (1): 103–105, 2001) there are two errors/mistakes due to a lapsus, which are herewith corrected respectively supplemented: (a) the contribution is my 267th contribution to the knowledge of Steninae, (b) these are the necessary indications concerning the holotype: ?-holotype: Otari, Pref. Nagano, 5. 6. 1995, Y. HIRANO (Nat. Hist. Mus. Inst., Chiba).

Reference

PUTHZ, V., 2001. A New Species of the Genus *Stenus* LATREILLE from Japan (Coleoptera, Staphylinidae) 167th (sic) Contribution to the knowledge of Steninae. *Spec. Publ. Japan Coleopt. Soc., Osaka*, (1): 103–105.

Ent. Rev. Japan, 56 (2): 75–79, Dec. 30, 2001

New or Little-known Tenebrionid Species from Japan (Part 2)

Kimio MASUMOTO
Institute of Human Living Sciences, Otsuma Women's University, Tokyo, 102–8357 Japan

and

Katsumi AKITA
Iba-chô 66, D–304, Hisai City, Mie Pref., 514-1108 Japan

Abstract Two new species of Tenebrionidae are described from Japan under the names, *Scaphidema hiranoi* sp. nov. and *Spiloscapha hiraii* sp. nov.

As the second part of the series of studies on the Japanese Tenebrionidae, we are going to describe new species belonging to the tribe Diaperini. The materials are offered by Mr. Yukihiko HIRANO of Odawara City and Dr. Keiichi TAKAHASHI of Tsukuba City. We thank these friends of ours and also thank Dr. Makoto KIUCHI of Tsukuba City for taking very clear photographs inserted in this paper.

All the holotypes are deposited in the collection of the National Science Museum (Nat. Hist.), Tokyo, Japan (NSMT).

Scaphidema hiranoi sp. nov.

[Japanese name: Okinawa–tsuya–gomimushidamashi]

(Figs. 1–2)

Yellowish brown, elytron pale yellow with black patches: an ovate and a subovate ones at the base, a transversely bat-wing shaped one at the middle, and an oblique one at the posterior part, 1st intervals and lateral margins of elytra and 4th to 11th segments of antennae nearly black; dorsal surface shining, ventral surface somewhat alutaceous; each surface except for antennal segments 4th to 11th and ventral sides of tarsi almost glabrous. Oblong-ovate, gently convex dorsad.

Head subrhombic, feebly raised in middle; clypeus somewhat invertedly trapezoidal, slightly convex in middle, weakly alutaceous, with membranous part in front, fronto-clypeal border curved and shallowly grooved; genae obliquely raised, irregularly scattered with small punctures, with outer margins gently rounded and arched; frons gently convex, rather steeply inclined anteriad, almost smooth, irregularly scattered with rather strong punctures, diatone about 3 times the width of transverse diameter of an eye. Eyes subreniform, convex laterad, obliquely, roundly inlaid into head. Antennae subclavate, weakly flattened, barely reaching humeral parts of elytra, each segment dilated apicad, ratio of the lengths of antennal segments from base to apex: 0.35, 0.2, 0.31, 0.35, 0.33, 0.33, 0.33, 0.34, 0.33, 0.55, 0.62.

Pronotum almost trapezoidal, 1.51 times as wide as long, widest at base; apex feebly emarginate though slightly produced in middle, bordered on each side; base slightly produced, noticeably produced in middle, weakly bordered, the border interrupted in medial part; front angles slightly obtuse with corners rounded; hind angles obtusely angulate; disc gently convex, smooth, rather sparsely scattered with punctures, which are a little smaller than those on head, with a shallow irregularly shaped impression close to base on each side; lateral margins remarkably grooved and finely rimmed, the rim with a hook at apical 1/4. Scutellum widely subcordate, very weakly convex, rather smooth, scattered with smaller punctures than those on head.

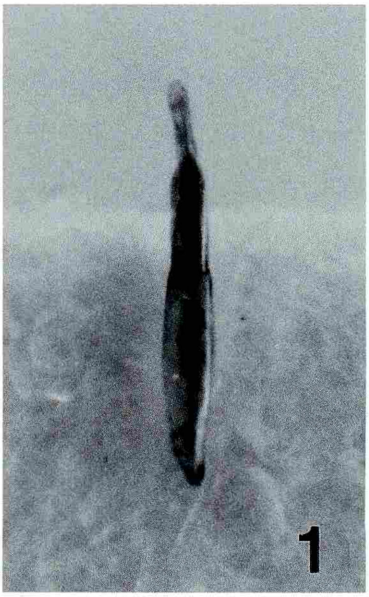


Fig. 1, *Scaphidema hiranoi* sp. nov., male genitalia (dorsal view).

Elytra subovate, twice as long as wide, 3.13 times the length and 1.6 times the width of pronotum, widest at basal 2/5; dorsum moderately convex, highest at basal 1/3; disc with rows of small punctures, which are sometimes connected by shallow grooves; intervals moderately convex, sparsely scattered with smaller punctures than those of the longitudinal rows; humeral parts gently swollen; apices feebly roundly produced.

Male anal sternite weakly ridged along basal halves of outer margins. Legs medium-sized and without particular modifications; ratios of the lengths of pro-, meso- and metatarsomeres: 0.31, 0.25, 0.23, 0.22, 1.2; 0.65, 0.33, 0.31, 0.32, 1.22; 1.21, 0.34, 0.31, 1.24.

Male genitalia elongate, 0.84 mm in length, 0.12 mm in width; basal piece gently curved in lateral view, with a somewhat V-shaped declivity at the border of lateral lobes; lateral lobes elongated elliptical, flattened, 0.32 mm in length, with flattened penis constantly exposed from apices.

Body length: 4.6 mm.

Holotype: ♂, Chinufuku-Rindo, Kunigami-son Vill., Okinawa Is., Ryukyu Isls., Japan, 10. VI. 2000, Y. HIRANO leg. (NSMT). Paratypes: 14 exs., same data as the holotype.

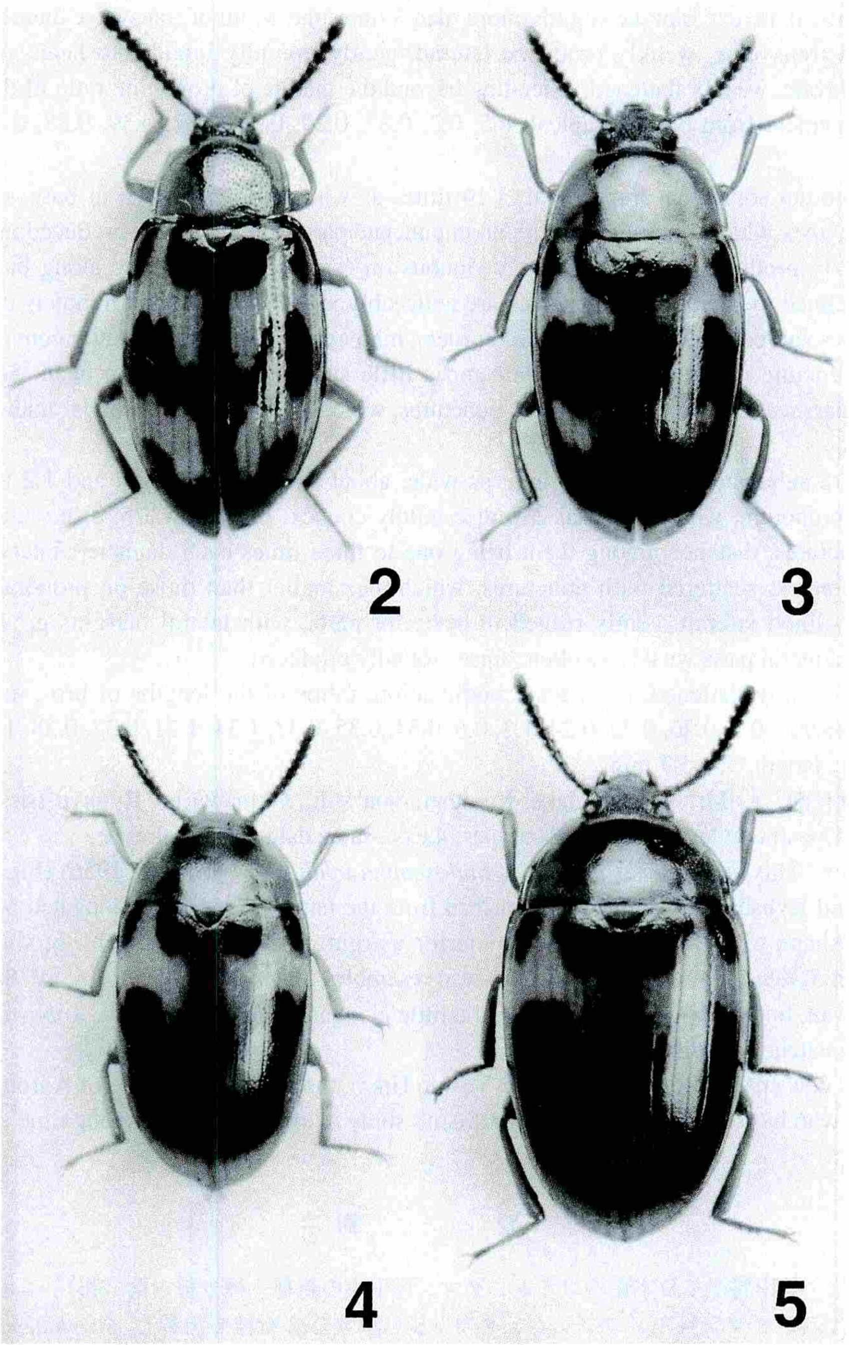
Notes. This new species resembles *Scaphidema kondoi* NAKANE, 1968, from Amami-Oshima, but can be distinguished from the latter by the more ovate body with more shiny dorsal surface, the head less noticeably punctate, the pronotum more transverse and not covered with isodiametric sculpture, the elytra with punctures in rows and those in intervals obviously weaker, and the different shape of blackish patches.

Spiloscapha hiraii sp. nov.

[Japanese name: Okinawa–komonkinoko–gomimushidamashi]

(Fig. 3)

Dark reddish brown, 3rd to basal part of 11th segments of antennae and eyes black, pronotum with two pairs of somewhat triangular black patches, elytra yellowish brown with blackish patches: two pairs of them at bases, a pair of large somewhat ax-shaped ones at the middle, and a pair of somewhat triangular ones at posterior 1/4, the middle patches with sinuous anterior margins, their posterior parts being connected with the posterior patches, 1st intervals and lateral margins darkened in coloration; dorsal surface covered with very weak isodiametrical microsculpture, moderately shining, ventral surface gently alutaceously shining.



Figs. 2–5. Habitus of *Scaphidema* and *Spiloscapha*. — 2, *Scaphidema hiranoi* sp. nov., holotype, ♂; 3, *Spiloscapha hiraii* sp. nov., holotype, ♀; 4, *S. ichihashii* (NAKANE, 1956); 5, *S. kobayashii* SHIBATA, 1978.

Ovate, gently convex dorsad.

Head transversely elliptical, gently inclined apicad, closely, rather strongly punctate, the punctures often fused with one another in lateral parts; clypeus rather narrow and subtrapezoidal, slightly depressed in lateral part, not clearly defined from frons, with transverse impunctate part produced apicad, fronto-clypeal border weakly curved and finely sulcate; genae oblique, gently convex above, impunctate in anterior parts before eyes, inlaid into anterior halves of eyes, with outer margins roundly produced, gena-clypeal borders weakly ridged and impunctate; frons subquadrate, flattened; diatone slightly more than 3 times the width of transverse diameter of an eye. Eyes transverse, weakly produced laterad, gently, roundly inlaid into head. Antennae slightly clavate, weakly flattened, extending beyond the middle of pronotum, ratio of the length of each segment from basal to apical: 0.5, 0.2, 0.37, 0.29, 0.33, 0.37, 0.39, 0.38, 0.35, 0.34, 0.63.

Pronotum somewhat trapezoidal, 1.14 times as wide as long, widest at base, gradually narrowed; apex widely emarginate, with an impunctate part weakly, widely produced in middle; base weakly produced in middle, gently sinuous on each side, impunctate along base; sides gently declined to lateral margins, which are noticeably widely grooved and minutely crenulate; front angles subrectangular with rounded corners, hind angles obtuse; disc gently convex, rather closely punctate, the punctures smaller and a little sparser than those on head. Scutellum semicircular, scattered with microscopic punctures, which are sparser and smaller than those on pronotum.

Elytra subovate, 1.4 times as long as wide, about 3 times the length and 1.2 times the width of pronotum, widest at basal 2/3; disc mildly convex, highest at 2/5; disc with rows of small punctures, distance among them being one to three times each diameter; intervals very slightly convex, scattered with punctures, which are smaller than those on pronotum; sides steeply inclined laterad, gently ridged in posterior parts, with lateral margins grooved and rimmed; humeral parts weakly swollen; apices roundly produced.

Legs gently flattened, no special modification; ratios of the lengths of pro-, meso- and metatarsomeres: 0.3, 0.26, 0.22, 0.24, 1.2; 0.6, 0.34, 0.35, 0.33, 1.34; 1.21, 0.37, 0.38, 1.44.

Body length: 5.4–5.7 mm.

Holotype: ♀, Mt. Nishime-dake, Kunigami-son Vill., Okinawa Is., Ryukyu Isls., 14. IX. 2001, K. TAKAHASHI leg. (NSMT). Paratypes: 4 exs., same data as the holotype.

Notes. This new species resembles *Spiloscapha ichihashii* (NAKANE, 1956) (Fig. 4) from Honshu and Kyushu, but can be distinguished from the latter by the more elongated body with different shape of the elytral patches (anterior margin of the central patch not sinuate but rounded in *S. ichihashii*). The new species also resembles *S. kobayashii* SHIBATA, 1978, (Fig. 5) from Taiwan, but the body is a smaller and a little elongated (ca. 7.5 mm in *S. kobayashii*) and the elytral patches are different in shape.

This new species is named after Dr. Yoshio HIRAI, the National Institute of Agrobiological Sciences, who has supervised Dr. K. TAKAHASHI's study in entomology for a long time.

要約

益本仁雄・秋田勝己：日本産のゴミムシダマシ科甲虫の新種・稀少種（第二報）．———— 日本産のゴミムシダマシ科キノコゴミムシダマシ族に属する2新種を記載し，*Scaphidema hiranoi* sp. nov. オキナワツヤゴミムシダマシ，および *Spiloscapha hiraii* sp. nov. オキナワコモンキノコゴミムシダマシと命名した．

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Descriptions of Seven New Species and Redescriptions of Two Species of the Genus *Trichotichnus* from China (Harpalini: Carabidae: Coleoptera)

Noboru ITO

1–7–18 Higashiuneno, Kawanishi City, Hyôgo Pref., 666–0117 Japan

Abstract In the genus *Trichotichnus*, seven new species of the subgenera *Amaroschesis* and *Trichotichnus* are described under the names of *Trichotichnus* (*Amaroschesis*) *constrictus* from Hubei, *T.* (*A.*) *reflexus*, *T.* (*A.*) *satanensis* and *T.* (*A.*) *langmusiensis* from Gansu, and *T.* (*A.*) *acuticollis*, *T.* (*T.*) *norikoae* and *T.* (*T.*) *pseudocongruus* from Shaanxi, and further two species, *Trichotichnus* (*Amaroschesis*) *denticollis* SCHAUBERGER and *T.* (*A.*) *jedlickai* SCHAUBERGER are redescribed with illustration of the aedeagi. *T. denticollis* is peculiar in having a long spine on inner sac of the aedeagus.

China is known to be superb in the species richness in the fauna and flora, and its good example is seen in the tribe Harpalini. Namely, they have rapidly increased in number of species in these several years and their extreme specializations in the features within the genus *Trichotichnus* are noticed, especially on the chaetotaxy, which is regarded as a stable character in the Harpalini, but is diversified in Chinese species. Additional materials of the Harpalini from China I obtained from last year include some new species, of which seven new species of *Trichotichnus* will be described in the following lines together with the redescriptions of two species.

New species are: *Trichotichnus* (*Amaroschesis*) *constrictus* from Hubei, *T.* (*A.*) *reflexus*, *T.* (*A.*) *satanensis* and *T.* (*A.*) *langmusiensis* from Gansu, and *T.* (*A.*) *acuticollis*, *Trichotichnus.* (*Trichotichnus*) *norikoae* and *T.* (*T.*) *pseudocongruus* from Shaanxi. Two redescribed are from SCHAUBERGER's species: *Trichotichnus* (*Amaroschesis*) *denticollis* and *T.* (*A.*) *jedlickai.* Since the subgenus *Amaroschesis* is characterized by the absence of the spine and short metepisternum (TSCHITSCHERINE), *T. denticollis* must be discussed its subgeneric position in the future.

I wish to express my hearty thanks to Dr. Fritz GUSENLEITNER of the Oberösterreichisches Landesmuseum, Linz, for kind loan of SCHAUBERGER's types under his care. *T. norikoae* is named after my wife, Noriko ITO who supports of my entomological study life in various way. Concerning measurement of body parts, see my former papers.

The abbreviation of depository is employed as following.

OLM: the Oberösterreichisches Landesmuseum, Linz.
OMNH: the Osaka Museum of Natural History, Osaka

Trichotichnus (Amaroschesis) denticollis SCHAUBERGER

(Figs. 1 and 3)

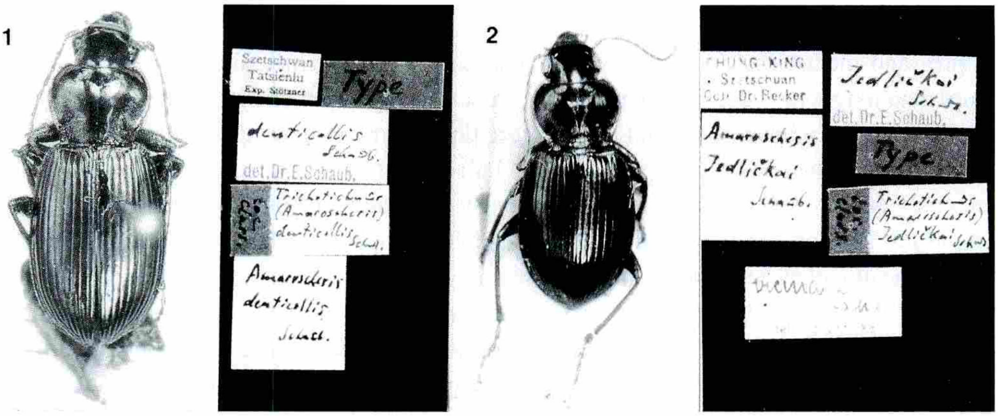
Trichotichnus denticollis SCHAUBERGER: 1936. Kol. Rdsch., 22: 18.

Body oblong, well convex, black, shiny, with clearly iridescent lustre on elytra; palpi and antennae light reddish brown, mandibles, lateral margins of pronotum and legs dark reddish brown.

Head rather wide, 0.68 times as wide as the pronotal width, moderately elevated on vertex, very finely and sparsely punctate; labrum subquadrate, gently and roundly protruding at apical corners; clypeus transversely depressed along emarginate apical margin, gently swollen behind the depression, finely and clearly sutured with frons; frontal impressions comparatively deep throughout, subarcuately running behind, and reaching supraorbital grooves; eyes large and relatively prominent; temples not humped, one-fifth of eye length; space between genuine ventral margin of eye and buccal fissure moderately wide; antennae surpassing a little beyond pronotal base, 3rd segment pubescent in apical two-thirds, as long as the 4th and twice the 2nd; mandibles moderate in robustness and general shape, terebral teeth of both left and right mandibles small and like hump, retinacular tooth of left one hardly produced and that of right one widely triangular; labial palpi rather thick, 2nd segment 1.13 times as long as the 3rd; ligula wide, gradually widened anteriad, arcuate at apex; paraglossae small, narrow, and slightly prolonged forwards beyond ligula; microsculpture not clear, consisting of isodiametric meshes on the clypeal depression and vertex, and of vague transverse meshes partly on the remaining portions.

Pronotum cordate, weakly elevated on disc, gently declivous apico-laterad, widest at apical two-fifths, 1.63 times as wide as long, smooth on disc, rather coarsely and sparsely punctate near middle of apex, and coarsely and moderately so in lateral furrows and basal foveae; sides clearly arcuate anteriad and sublinearly oblique posteriad from the widest point, deeply short-sinuate before base; apex deeply emarginate and clearly bordered lengthwise; base one-tenth wider than apex, straight in middle half, hardly oblique at sides, thickly and entirely bordered; apical angles well protruding and narrowly rounded; basal angles acute, triangularly produced laterad; lateral furrows gradually widened posteriad from apex, joining basal foveae; basal foveae large, rather deeply grooved inside; front transverse impression fairly deep, the hind one shallow; median line fine, shallow, and extending a little beyond both the impressions; microsculpture rather obscure, invisible in part, detectable as transverse meshes and as isodiametric meshes partly in basal foveae.

Elytra oblong-oval, 1.48 times as long as wide, three-tenths wider than the pronotal width, gently sloping laterad; sides weakly arcuate in middle, more strongly so in humeri, with very shallow preapical sinus; apices not produced, sublinear at outer margins, rounded at tips, narrowly separated from each other; bases each shallowly emarginate, forming an angulate and very wide angle with lateral border; striae a little wider and deeper than in usual species of the subgenus, clearly crenulate, scutellar striole a little short; intervals almost flat, slightly elevated apically and basally, 3rd interval not possessing dorsal pore; marginal series not interrupted, but spaces between adjoining pores in middle somewhat wide, consisting of 27–29 umbilicate pores; microsculpture fine and relatively dense, visible as transverse lines. Hind wings fully rudimentary, one-fifth of the elytral length.



Figs. 1–2. Habitus and type labels of *Trichotichnus* (*Amaroschesis*) spp.; 1, *Trichotichnus* (*Amaroschesis*) *denticollis* SCHAUBERGER; 2, *Trichotichnus* (*Amaroschesis*) *jedlickai* (SCHAUBERGER).

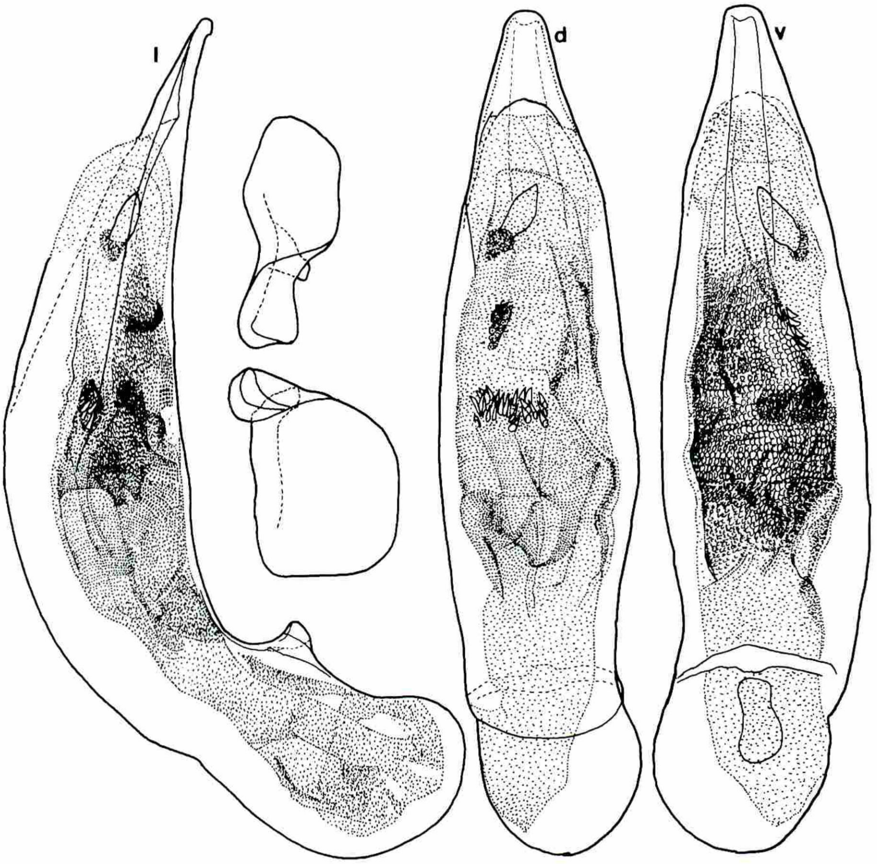


Fig. 3. Male genitalia of *Trichotichnus* (*Amaroschesis*) *denticollis* SCHAUBERGER; d, dorsal view; l, lateral view; v, ventral view.

Ventral surface almost impunctate, sparsely punctate on median part of prosternum, metepisterna, and lateral parts of metasternum, sparsely covered with short pubescence medially on pro- and metasterna and 2nd and 3rd abdominal sternites; metepisternum short, one-third wider than long; 6th abdominal sternite in ♂ truncate at apex and unisetose at each side.

Hind femora bisetose at hind margin; fore tibiae slim, bisetose apico-externally, obscurely sulcate in basal half, terminal spur edentate; 1st segment of mid tarsus in ♂ bearing adhesive hairs only at apex, hind tarsus 1.14 times as long as the width of head, 1st segment 0.73 times as long as the 2nd and 3rd combined together, 2nd a half longer than the 3rd which is one and one-third of the 4th, claw segment ventrally possessing four or five setae along each side.

Aedeagus (Fig. 3) stout, thin and shallowly concave at apex which is slightly hooked ventrally at tip; apical orifice wide in apical fourth, inner sac bearing a long and thick sclerite near apex and two groups of small sclerites, fore group consisting of conical sclerites arranged longitudinally and situated near apical third and the hind one of slim spines arranged transversely and in middle; apical lobe elongate-triangular, rounded at tip; ventral surface bordered at each side.

Female unknown.

Length: 11.8 mm. Width: 4.9 mm.

Specimen examined: 1 ♂ (Holotype), Tatsienlu, Szetschwan (= Sichuan), China, Exp. Stötzner. (Preserved in OLM).

This species has a long sclerite in inner sac like species of the *leptopus* group of the subgenus *Trichotichnus*, and exceptional in species of the subgenus *Amaroschesis*. The absence of sclerite is one of characteristics which define the subgenus. The spine must be copulatory piece and important organ related to female characteristics. Thus, the decision of its subgeneric position is to be referred after the examination of more materials in the future.

Trichotichnus (Amaroschesis) jedlickai (SCHAUBERGER)

(Figs. 2 and 4)

Amaroschesis jedlickai SCHAUBERGER, 1932. Wien. Ent. Zeitg., 49: 94.
Trichotichnus jedlickai: SCHAUBERGER, 1936. Kol. Rdsch., 22: 20.

Body oblong, well thick, blackish brown, feebly iridescent on pronotum and clearly so on elytra; palpi and 2nd and the following segments of antennae yellowish brown, 1st antennal segments and tarsi light brown, femora and tibiae reddish brown.

Head rather large, 0.69 times of the pronotal width, gently elevated on vertex, with wide interocular space a little wider than seven-tenths of the width of head including eyes; labrum subquadrate, widely triangularly emarginate at apex; clypeus depressed in apical third, weakly and transversely swollen, with shallowly emarginate apex; clypeal suture somewhat wide and shallow; frontal impressions linearly divergent posteriad, comparatively deeper than in usual species of the subgenus; eyes large, gently prominent; temples slightly bulging, one-fourth of the eye length; genuine ventral margin of eye widely isolated from buccal fissure; antennae slender, reaching basal tenth of elytra, 3rd segment pubescent in apical three-fifths, as long as the 4th and twice the 2nd; mandibles robust and somewhat long, terebral tooth of left mandible small and rounded and that of right one only swollen, retinacular tooth of left one more or less

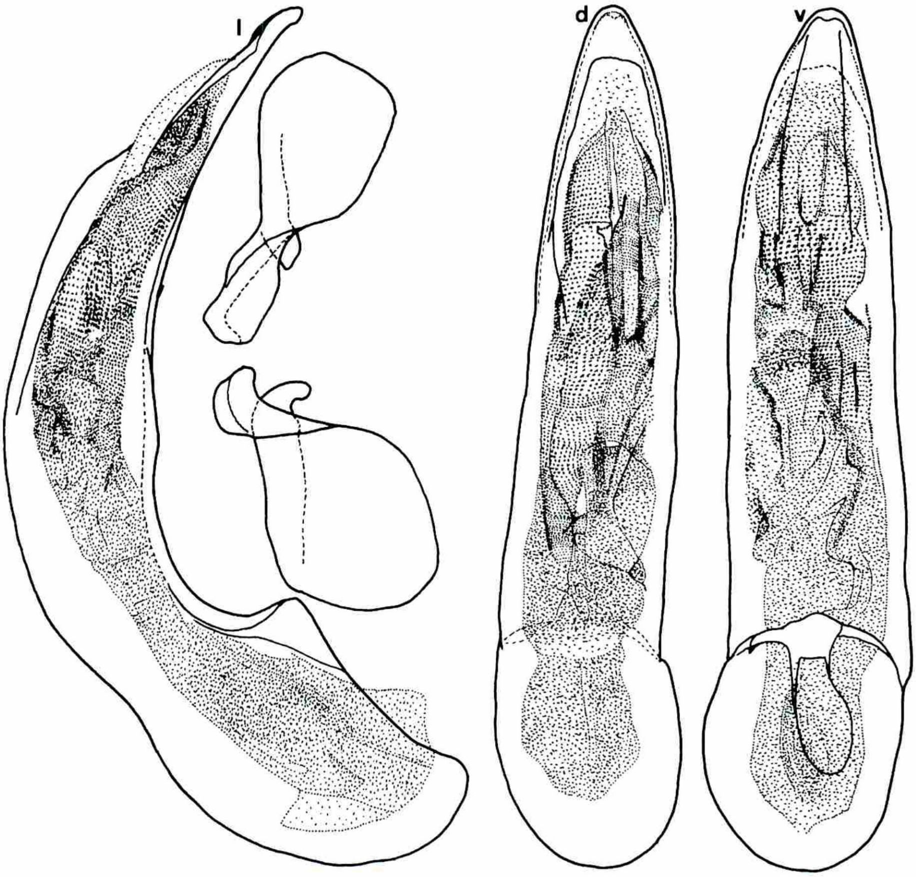


Fig. 4. Male genitalia of *Trichotichnus* (*Amaroschesis*) *jedlickai* (SCHAUBERGER); d, dorsal view; l, lateral view; v, ventral view.

produced and that of right one somewhat distinctly protrudent and rounded; labial palpi moderate-thickness, 3rd segment slightly longer than the 2nd; ligula wide, emarginate at sides, truncate at apex; paraglossae narrow at portions separated from ligula, slightly extending beyond ligula; median tooth of mentum regular-triangular and not large, epilobes narrow, not widened distad; microsculpture clearly detected as mixtures of isodiametric and square meshes.

Pronotum cordiform, widest slightly behind apical two-fifths, 1.47 times as wide as long, gently raised on disc, weakly sloping apico-laterad; sides rather strongly arcuate anteriad and almost linearly convergent posteriad from the widest point, more or less deeply sinuate before base, thickly bordered; apex clearly emarginate, entirely bordered; base slightly wider than apex (1.06 in ratio), hardly emarginate, with thick border like sides; lateral furrows narrow in apical two-fifths, thence gradually widened basad, linked with basal foveae; basal foveae each relatively wide and deep, with a weak and oblique ridge; front transverse impression deep and the hind one shallower than it; median line fine, shallow, vanished near apex and base; surface smooth widely on disc, rather coarsely punctate in lateral furrows and basal foveae; microsculpture fine and clear, consisting of transverse meshes on disc and of isodiametric meshes in the furrows and foveae.

Elytra oval, two-fifths longer than wide, one-fourth wider than pronotal, uniformly well convex, without punctures; sides clearly curved in humeri, weakly arcuate in middle, very shallowly sinuate preapically; apices not produced behind, sublinear at outer margins, with subacute tips closed from each other; bases each shallowly emarginate, with blunt humeral angle very larger than wide; striae relatively wide and deep, finely crenulate, scutellar striole fairly long; intervals flat on disc, very weakly elevated basad and apicad, a dorsal pore of 3rd interval slightly before middle; marginal series continuous, consisting of 24 umbilicate pores; surface more or less clearly microlined. Hind wings fully reduced, one-sixth of elytral length.

Ventral surface mostly smooth, sparsely and minutely punctate medially on prosternum and sparsely and somewhat coarsely so on metepisterna and laterally on metasternum, sparsely covered with short pubescence medially on pro- and metasterna and 2nd and 3rd abdominal sternites; metepisternum short, one-fourth wider than long; 6th abdominal sternite in ♂ bisetose along apical margin and gently arcuate between the setae.

Legs fairly long; fore tibia weakly dilated distad, trisinuous apico-external margin, without sulcus dorsally, terminal spur lanceolate; hind femora bi- or trisetose along hind margin; 1st segment of mid tarsi in ♂ armed with adhesive squamae only at apex, hind tarsi nearly as long as the width of head, 1st segment three-sevenths times as long as the 2nd and 3rd taken together, 2nd segment one-fifth longer than the 3rd and twice the 4th, claw segment quadrisetose along each ventral margin.

Aedeagus (Fig. 4) rather stout, gently curved, gradually tapered apicad, weakly arcuate at apex; apical orifice wide, open in apical half, inner sac without sclerite; ventral surface shallowly concave, bordered at apical margin, the border widened at tip.

Length: 11.2 mm. Width: 5.0 mm.

Female unknown.

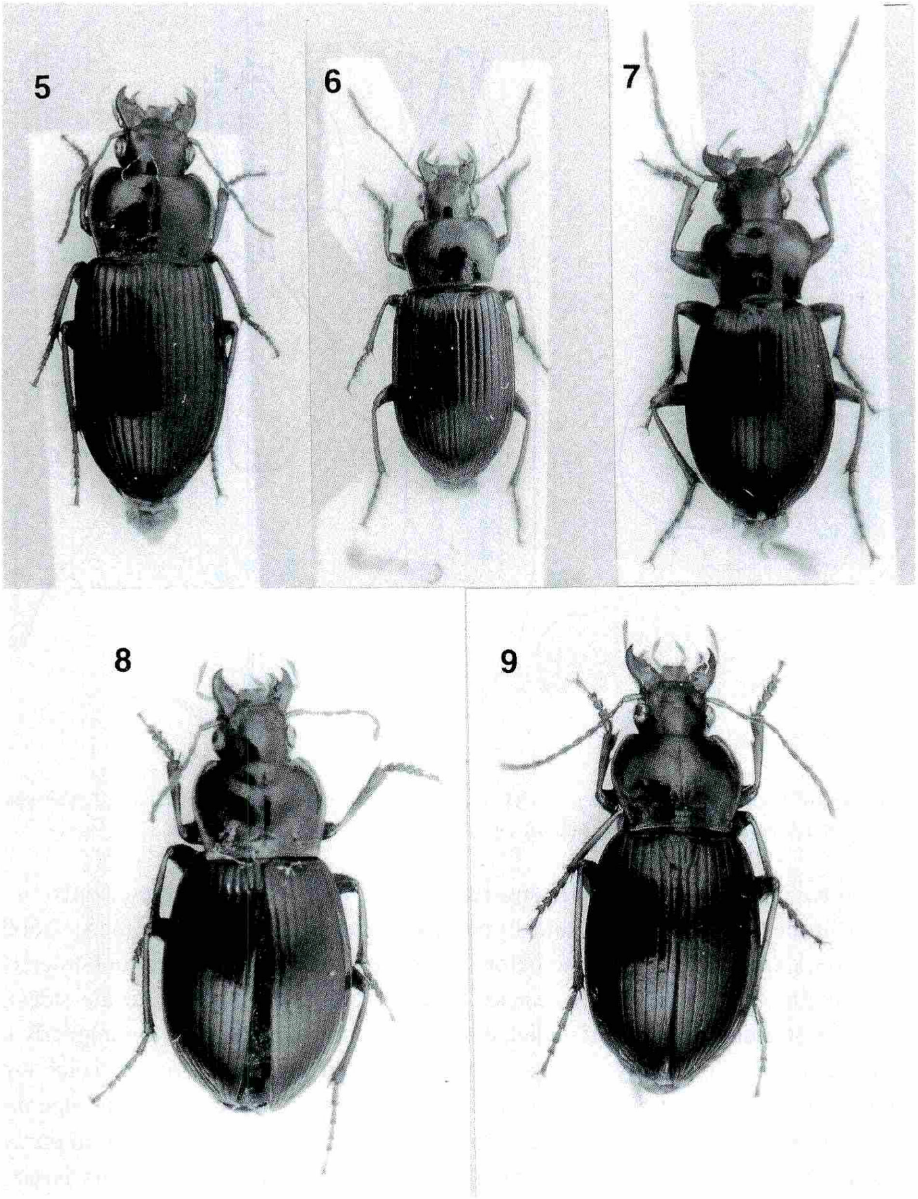
Specimen examined: 1 ♂ (holotype), Chung-King, Szetschuan (= Sichuan), Dr. BECKER leg. (Preserved in OLM).

***Trichotichnus* (*Amaroschesis*) *constrictus* N. ITO, sp. nov.**

(Figs. 7 and 10)

Body similar in shape to species of the *leptopus* group, black to slightly brownish black, shiny, feebly iridescent on elytra; head including labrum and mandibles dark brown or rarely not dark, palpi, antennae and legs light brown.

Head gently raised on vertex, 0.68 times as wide as the pronotal width, not or very sparsely and microscopically punctate, with interocular space wide and five-sevenths the width of head including eyes; labrum subquadrate, shallowly and triangularly emarginate apically; clypeus triangularly and moderately produced at apical corners, straight or hardly arcuate between the corners, often with several rugosities near sides; clypeal suture varied in clearness, not interrupted lengthwise; frontal impressions shallow but clear, linearly divergent backwards, not extending supraorbital grooves; eyes rather small, weakly prominent; temples long, somewhat bulging, a little longer than one-third the eye length; genuine ventral margin of eye widely isolated from buccal fissure; antennae long and slender, apical three segments surpassing pronotal base, 3rd segment pubescent in apical half, as long as the 4th and twice the 2nd;



Figs. 5–9. Habitus of *Trichotichnus* spp. 5, *T.* (*T.*) *norikoae* N. Ito, sp. nov.; 6, *T.* (*T.*) *pseudocongruus* N. Ito, sp. nov.; 7, *T.* (*Amaroschesis*) *constrictus* N. Ito, sp. nov.; 8, *T.* (*A.*) *reflexus* N. Ito, sp. nov.; 8, *T.* (*A.*) *acuticollis* N. Ito, sp. nov.

mandibles robust, sharpened at tips, tooth of same manner as the usual species of the subgenus; palpi slim, 3rd segment of labial palpus one-sixth longer than the 2nd; ligula parallel in most portion, abruptly expanded just before apex, where the ligula is isolated from narrow paraglossae; epilobes of mentum weakly widened apicad; microsculpture rather clear and fine, mostly visible as isodiametric meshes, and as transverse meshes partly on frons.

Pronotum cordiform, widest near apical third, 1.47–1.52 times as wise as long, rather steeply sloping apico-laterad, largely smooth on disc, vaguely and sparsely punctate on middle

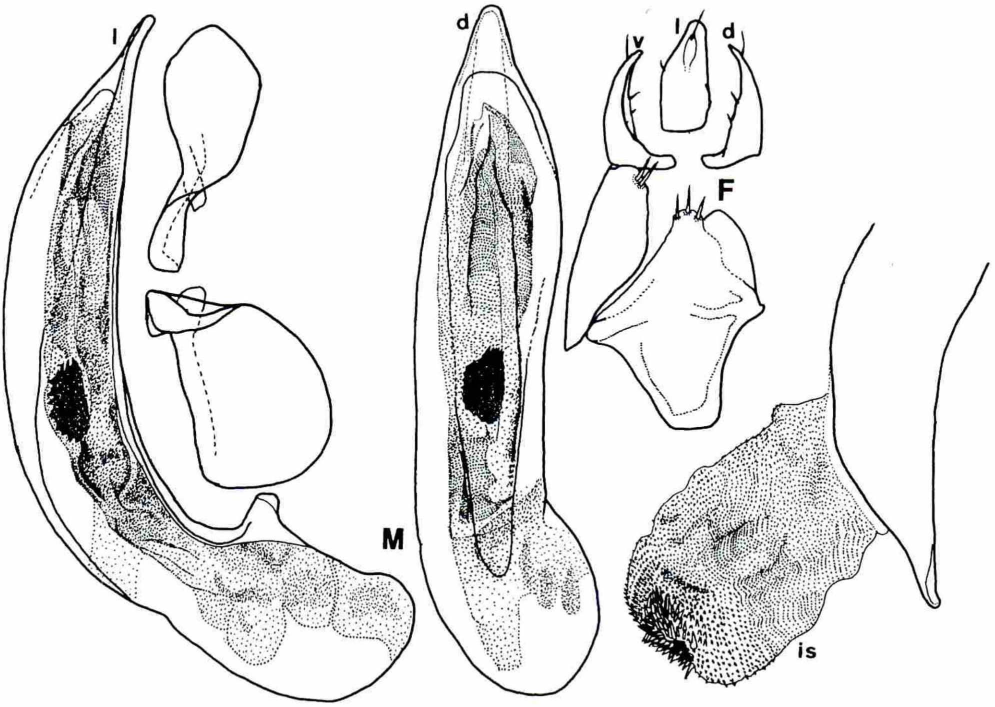


Fig. 10. Genitalia of *Trichotichnus* (*Amaroschesis*) *constrictus* N. Ito, sp. nov.; M, male genitalia; F, female genitalia; d, dorsal view; l, lateral view; v, ventral view; is, inner sac.

of apical area, coarsely punctate in lateral furrows and basal foveae, the punctures of foveae partly fused from each other; sides thickly bordered, arcuate in apical half, thence sublinearly convergent backwards, clearly sinuate before base; apex gently emarginate, unbordered in the middle; base almost straight, feebly arcuate at sides, with thick border like the sides; apical angles fairly protruding, narrowly rounded; basal angles almost rectangular, triangularly toothed at tips; lateral furrows gradually widened behind, confused with basal foveae which are deep, large and elongate; front transverse impressions rather clear to obscure, the hind one obsolete; median line moderately in depth, entire or not reaching apex; surface largely impunctate on disc, sparsely punctate in frontal impression, coarsely so in lateral furrows and basal foveae whose punctures are partly confluent; microsculpture fine, rather clear, observable as transverse meshes on disc and as isodiametric ones near apex and in lateral furrows and basal foveae.

Elytra ovate, two-fifths longer than wide, three-tenths wider than the pronotal width, uniformly convex, not punctate; humeri clearly curved; preapical sinus somewhat deep; apices narrowly and separately rounded; bases each shallowly emarginate, forming an obtuse and acute angle with lateral margin; striae shallow, narrow and clearly crenulate, scutellar striole long; intervals flat on disc, weakly elevated near apices and bases, dorsal setiferous pores of 3rd interval absent; marginal series continuous, composed of 22–24 umbilicate pores; microsculpture somewhat clearly visible as transverse lines. Hind wings vestigial.

Ventral surface mostly smooth, minutely and sparsely punctate on mesepisterna, rather coarsely so on lateral portions of metasternum and 1st to 3rd abdominal sternites and on metepisterna; metepisternum one-seventh shorter than long; 6th abdominal sternite in ♂ unisetose and in ♀ bisetose at each side, in both sexes widely and rather clearly rounded at apical margin.

Legs long; hind femora bisetose near hind margin; fore tibiae without sulcus, terminal spur long and lanceolate; mid tarsi in ♂ bearing adhesive squamae in apical half of ventral surface, hind tarsi 1.08–1.12 times in ♂ and 0.97 times in ♀ as long as the width of head, 1st segment short, 0.61–0.66 times as long as the 2nd and 3rd taken together, 2nd one-fourth longer than the 3rd and twice the 4th, claw segment trisetose (bisetose in one female) along each ventral margin.

Aedeagus (Fig. 10–M) gently arcuate, gradually tapered distad, apex thin and weakly bent ventrad; apical orifice widely open, inner sac (Fig. 10–is) with a cluster of small spines before middle; apical orifice elongate-triangular, narrowly rounded and unbordered at tip; ventral surface ridged at sides, shallowly concave between the ridges. Stylus (Fig. 10–F) moderately curved outward, with a minute spine and two short setae along ventral and dorsal margins, respectively; basal segment bisetose apico-externally; valvifer trisetose at apex.

Length:9.0–10.2 mm. Width:4.1–4.4 mm.

Holotype: ♂, Dashennongjia Mts., 31.5 N, 110.3 E, 2,800–3,000 m, W Hubei, China, 15. VI. 2000, Jaroslav TURNA leg. (Preserved in OMNH). Paratypes: 9♂♂, 1♀, same data as the holotype; 1♂, Shennongjia forest region, 2,000 m, Hubei, China, 4–8. VI. 1995, A. SHAMAEV leg.; 1♂, Dashennongjia Mts., 2,300 m, Shipusa env., NW China, 26. VI.–1. VII. 1998.

This new species is similar in shape to species of the *leptopus* group. The new species is somewhat allied to *Trichotichnus* (*Amaroschesis*) *denticollis* SCHAUBERGER, but the body is smaller in size, the head is brownish instead of black, the hind tarsi are shorter, and the aedeagus does not possess a long peg-shaped sclerite in inner sac.

***Trichotichnus* (*Amaroschesis*) *reflexus* N. ITO, sp. nov.**

(Figs. 8 and 11)

Body oblong-oval, rather thick, black to brownish black, shiny, with iridescent lustre on elytra; palpi, labrum, antennae, mandibles, lateral margins of pronotum, tibiae and legs brown, dorsal surface of head, pronotum, lateral margins and sutural intervals dark reddish brown.

Head moderate in width, 0.67–0.68 times as wide as the pronotal width, gently elevated, very sparsely and microscopically punctate, with interocular space relatively wide, 0.73–0.80 times as wide as the width of head; labrum subquadrate, straight or shallowly emarginate at apex; clypeus slightly and wide-triangularly protruding at apical corners, weakly swollen along apex; clypeal suture fine and not interrupted; frontal impressions subarcuately and obliquely running towards supraorbital grooves; eyes small and weakly convex; temples gently sloping, long, slightly larger than one-third of eye length; space between buccal fissure and eye rather wide; palpi slender, 3rd segment of labial palpus weakly tumid medially, as long as the 2nd; ligula wedge-shaped, acute at apical corners; epilobes weakly expanded forwards; microsculpture rather clear, visible as isodiametric meshes on clypeus and as mixtures with isodiametric and transverse meshes from frons to vertex.

Pronotum subcordate, widest a little behind apical third, nearly two-fifths wider than long, gently convex; sides weakly arcuate convergent forwards and linearly so backwards from the

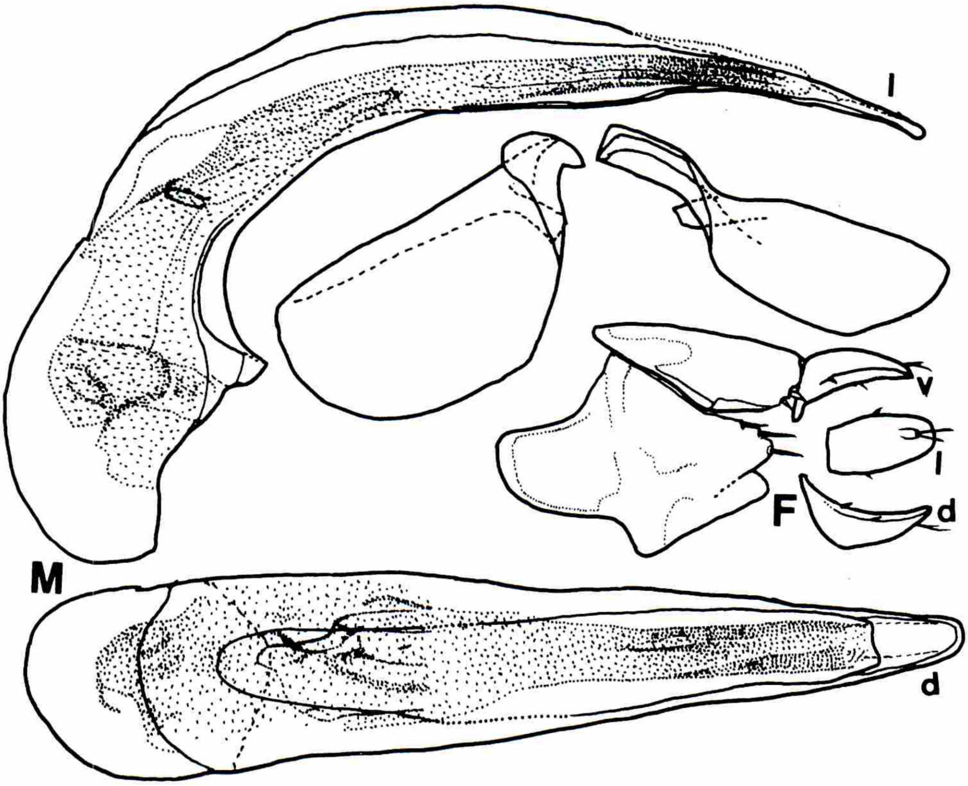


Fig. 11. Genitalia of *Trichotichnus* (*Amaroschesis*) *reflexus*, N. Ito, sp. nov.; M, male genitalia; F, female genitalia; d, dorsal view; l, lateral view; v, ventral view.

widest point, long-sinuate and reflected before base; apex rather deeply emarginate and entirely bordered; base one-fourth wider than apex, slightly oblique at sides, feebly arcuate in the bottom, thickly bordered lengthwise; apical angles well produced, very narrowly rounded; basal angles rectangular or a little sharper; lateral furrows narrow in apical half, gradually widened backwards in basal one; basal foveae each almost flat or hardly humped in the middle, with a small groove; front transverse impression relatively deep, the hind one obscure; median line fine, clear, reduced just before apex and base; dorsal punctures absent narrowly on disc, sparse and minute near apex, sparse and coarse in lateral furrows, and rather dense, coarse, and partly confluent in basal foveae; microsculpture clearly observable, composed of mixtures with transverse, square and isodiametric meshes.

Elytra ovate, 1.36–1.47 times as long as wide, uniformly well convex; sides gently curved in humeri, very shallowly sinuate preapically; apices subangularly rounded at tips; bases each shallowly emarginate, forming an obtuse and angulate angle with lateral border; striae shallow, slightly changed in width within each, scutellar striole fairly long, reaching 1st striae; intervals flattened lengthwise, a setiferous pore on 3rd interval situated between middle and apical two-fifths; marginal series subinterrupted medially, composed of (9–10) + (9–12) umbilicate pores; surface relatively clearly microlined. Hind wings vestigial, one-sixth of elytral length.

Ventral surface somewhat coarsely and moderately punctate on pro- and metepisterna and laterally on metasternum; metepisternum nearly three-fourths times as wide as long; 6th abdominal sternite in both sexes bisetose at each side, truncate or barely emarginate in ♂ and fairly and roundly protruding in ♀ at apex.

Hind femora bisetose behind; fore tibiae vaguely sulcate, trispinous apico-external margin, terminal spur long and lanceolate; tarsi long, 1st mid tarsal segment in ♂ furnished with adhesive squamae in apical half, hind tarsi 1.04–1.07 times in ♂ and 0.87 times in ♀ as long as the width of head, 1st two-thirds as long as the 2nd and 3rd taken together and one-fifth longer than the 2nd, 3rd nearly one-third longer than the 4th, claw segment quadrisetose along each ventral margin.

Aedeagus (Fig. 11–M) slender, clearly curved behind basal bulb, thence slightly arcuate, gradually thinned distad, not thickened at apex; apical orifice wide in apical third, inner sac without any sclerites; apical lobe relatively elongate, rounded and unbordered at distal margin; ventral surface longitudinally depressed along middle, ridged at sides of the depression. Stylus (Fig. 11–F) rather robust, with a minute spine along each outer margin; basal segment bisetose apico-externally; valvifer trisetose at apex.

Length: 8.8–9.5 mm. Width: 3.8–4.2 mm.

Holotype: ♂, Min Shan Mts., 2,100 m, 70 Km NW from Wudu, Gansu, China, 25. VII. 2000, A. GORODINSKY leg. (Preserved in OMNH). Paratypes: 4♂♂, 2♀♀, same data as the holotype; 1♀, Min Shan Mts., 3,300 m, Satan Vill., 95 Km NW from Wudu, Gansu, China, 18. VI. 2001, A. GORODINSKY; 2♂♂, 1♀, 20 Km W from W Tewo, 2,900 m, 19–20. VIII. 2000, S MURZIN leg.

This new species is allied to *Trichotichnus* (*Amaroschesis*) *satoi* N. ITO, but the color is lighter in lateral margins of pronotum and elytra, and elytral sutural intervals; the pronotum is more deeply sinuate at sides before base, and the microsculpture is less clear.

Trichotichnus* (*Amaroschesis*) *satanensis N. ITO, sp. nov.

(Figs. 12)

Comparing with previous species, *T. reflexus*, this new species is much darker on surface, the eyes is less prominent, the pronotum is sharper and protruding latero-posteriad at basal angles and the microsculpture is clearer. The new species is different from *T. satoi* in having the eyes more prominent, the basal angles of pronotum protruding latero-posteriad, and the elytra more ovate.

Body oblong-oval, thick, black, shiny, not or hardly iridescent on elytra. Head slightly larger than two-thirds of pronotal width, very sparsely punctate, gently elevated; labrum rather deeply and triangularly emarginate; clypeal suture vague; frontal impressions shallow, linearly divergent behind; temples not developed; genuine ventral margins of eyes widely separated from buccal fissure; antennae short and not reaching elytral bases, 3rd segment pubescent in apical two-thirds, as long as the 4th and about a half longer than the 2nd; microsculpture clear, mainly visible as isodiametric meshes and partly as transverse meshes. Pronotum subquadrate, two-fifths wider than long, relatively well convex; sides weakly convergent apicad and basad, not or weakly sinuate before base; apex rather deeply emarginate; base 1.14–1.23 times as wide as apex, uniformly emarginate; all margins thickly bordered; dorsal punctures lacking on disc,

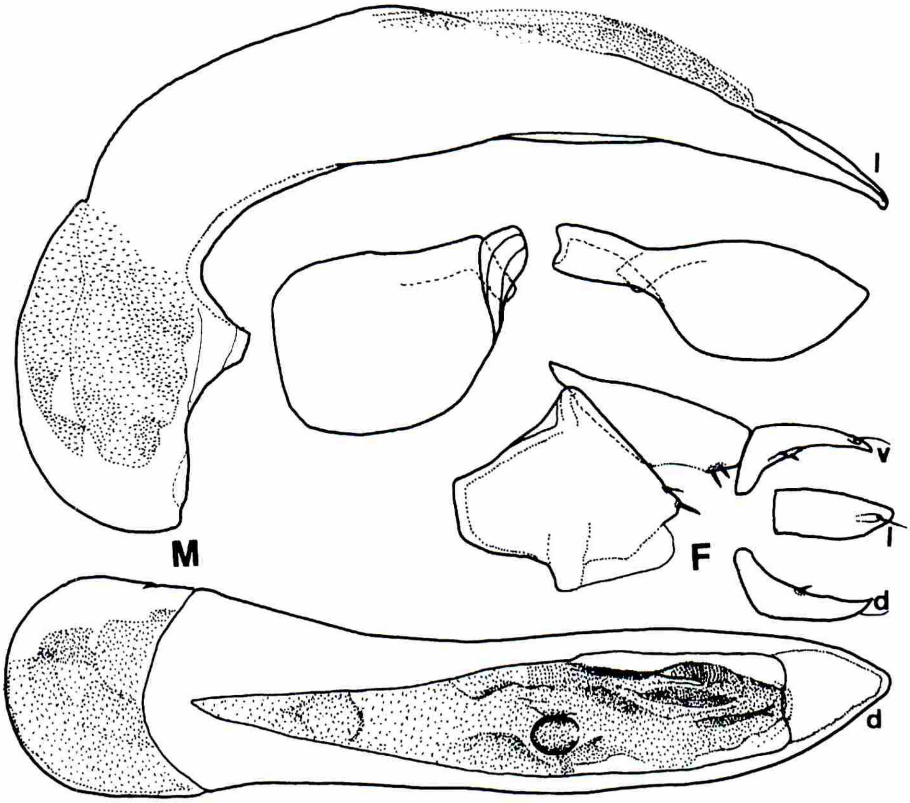


Fig. 12. Genitalia of *Trichotichnus* (*Amaroschesis*) *satanensis* N. Ito, sp. nov.; M, male genitalia; F, female genitalia; d, dorsal view; l, lateral view; v, ventral view.

very sparse and minute near apex, moderate in lateral furrows and rather coarse in basal foveae; microsculpture clearly impressed, consisting of isodiametric and subsquare meshes. Elytra oval, short, 1.27–1.41 times as long as wide, uniformly and fairly convex, with very sparse and minute punctures; sides weakly curved in humeri, hardly sinuate preapically; apices narrowly rounded at tips which are narrowly separated from each other; bases each weakly oblique at sides, forming an obtuse and sharp angle with lateral margin; striae fine, shallow, weakly zigzag; intervals not elevated, a setiferous pore on 3rd interval situated between apical third and tow-fifths; marginal series continuous, wide at spaces between neighboring umbilicate pores in middle, 19–21 in number of the pores; surface clearly microlined, isodiametrically meshed near bases. Hind wings vestigial, one-fifth as long as the elytral length. Ventral surface almost smooth, with vague and sparse punctures on lateral portions of metasternum and metepisterna; metepisternum short, 0.80 times as wide as long; 6th abdominal sternite in both sexes bisetose at each side, weakly and widely rounded in ♂ and a little more clearly so in ♀. Legs short; hind femora bisetose near hind margin; fore tibiae vaguely sulcate in middle, trispinous apico-externally; hind tarsi seven-eighths times in ♂ and four-fifths times in ♀ as long as the width of head, 1st segment two-thirds as long as the 2nd and 3rd taken together and as long as the 2nd, 3rd three-sevenths longer than the 4th, claw segment trisetose along each ventral margin.

Aedeagus (Fig. 12–M) invisible of most inner structure in lateral aspect due to well chitinized outer surface, stout, weakly arcuate, gradually thinned distad from middle, ventro-obliquely directed at tip; apical orifice widely opening in apical half, inner sac armed with hemispherical sclerite medially; apical lobe triangular, narrowly rounded at distal margin; ventral surface ridged at sides. Stylus (Fig. 12–F) weakly curved, a small spine at each external margin; basal segment with two setae at apico-external portion; valvifer bisetose at apex.

Length: 8.1–8.9 mm. Width: 3.6–4.0 mm.

Holotype: ♂, Satan Vill., Min Shan Mts., 3,300 m, 95 Km NW from Wudu, Gansu, China, 18. VI. 2001, A. GORODINSKY leg. (Preserved in OMNH). Paratypes: 3♂♂, 4♀♀, same data as the holotype.

Trichotichnus* (*Amaroschesis*) *langmusiensis N. ITO, sp. nov.

(Fig. 13)

This new species is allied to the previous new species, *T. satanensis*, but the body is more elongate, the head is larger (0.71–0.74 times as wide as the pronotal width), the pronotum is not or much more shallowly sinuate before base, the lateral margins of pronotum and of elytra and elytral sutural intervals are dark brown instead of being black, and the elytral striae are deeper

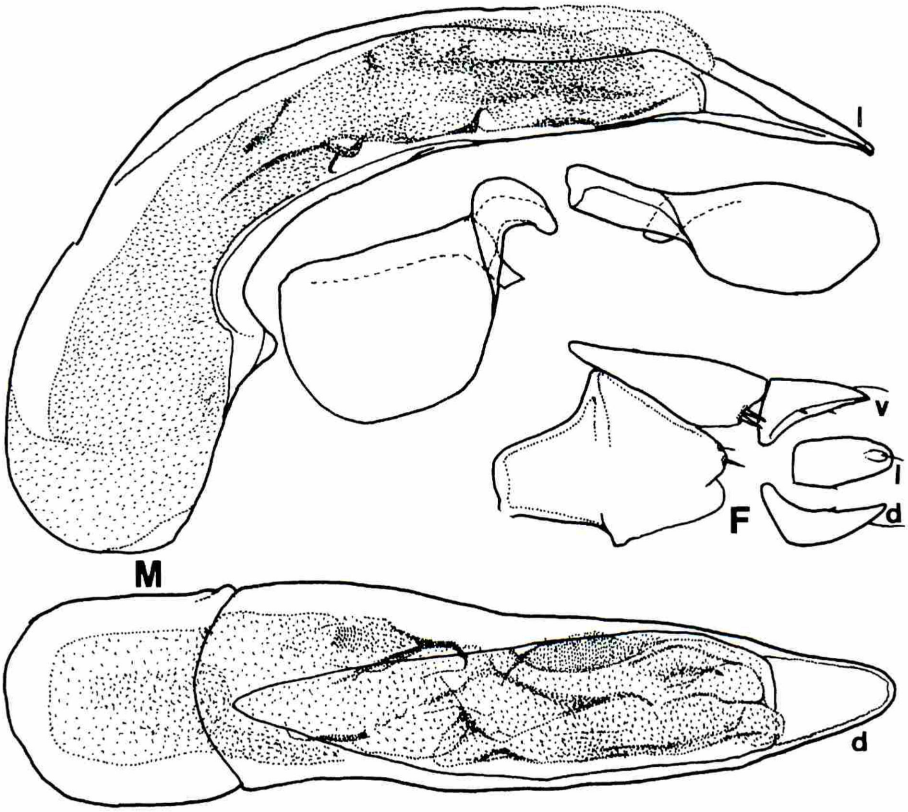


Fig. 13. Genitalia of *Trichotichnus* (*Amaroschesis*) *langmusiensis* N. ITO, sp. nov.; M, male genitalia; F, female genitalia; d, dorsal view; l, lateral view; v, ventral view.

and wider.

Body oblong, narrowly oval, black or somewhat brownish, slightly iridescent on elytra. Head very sparsely and microscopically punctate, moderate in convexity, interocular space rather wide and 0.71 times as wide as the width of head; genuine ventral margins of eyes widely isolated from buccal fissure; antennae short, hardly reaching elytral bases; microsculpture rather clearly visible as mixtures with isodiametric and square meshes. Pronotum subquadrate, 1.45–1.48 times as wide as long, moderately convex, sparsely and minutely punctate near apex and coarsely and moderately so in lateral furrows and basal foveae, punctures of the foveae partly confluent; sides weakly convergent apicad and basad, straightly oblique in basal portions; apex rather deeply emarginate, straight at the bottom; base one-fifth wider than apex, uniformly emarginate; basal angles a little larger than rectangular, hardly blunt-toothed at tips, thickly bordered lengthwise; microsculpture clearly observed, especially so distinct in basal foveae as to be opaque, consisting of mixtures with isodiametric and square meshes. Elytra elliptical, 1.45 times as long as wide, fairly convex; preaipcal sinus somewhat deep; apices narrowly separated; bases weakly oblique at sides; humeral angles obtuse and angulate; intervals gently elevated, a setiferous pore on 3rd interval situated slightly behind middle; striae rather deep, scutellar striole short; marginal series continuous, 21–22 umbilicate pores; microsculpture clearly impressed, visible as mixtures with transverse lines and meshes. Hind wings vestigial. Ventral surface vaguely punctate on metepisterna and lateral portions of metasternum; metepisternum about four-fifths times as long as wide; 6th abdominal sternite bisetose in both sexes at each side, truncate in ♂ and gently arcuate in ♀ at apex. Legs short; fore tibiae sulcate in apical third; hind tarsi almost equal in ♂ in length to and three-fourths times in ♀ as long as the width of head, 1st segment 0.71 times as long as the 2nd and 3rd taken together and two-ninths longer than the 2nd, 3rd four-ninths longer than the 4th, claw segment tri- or quadrisetose along each ventral side. Aedeagus (Fig. 13–M) similar in shape to that of the previous new species, *T. satanensis*, in lateral view; inner sac of apical orifice without sclerite; apical lobe a little more elongate than in *T. satanensis*.

Length: 8.0–9.0 mm. Width: 3.2–3.8 mm.

Holotype: ♂, 20 Km S of Langmusi, 3,300 m, S Gansu, China, 19. VIII. 2000, MURZIN (Preserved in OMNH). Paratypes: 1 ♂, 2♀♀, same data as the holotype.

Trichotichnus* (*Amaroschesis*) *acuticollis N. ITO, sp. nov.

(Figs. 9 and 14)

This new species is allied to *Trichotichnus* (*Amaroschesis*) *minshanensis* N. ITO, but the pronotum is wholly punctate instead of being impunctate on disc and more strongly protruding laterad at basal angles and the bases of elytra are not emarginate.

Head moderate in width, slightly wider than two-thirds of the pronotal width, very sparsely and minutely punctate; eye small and not convex; genuine ventral margin of eye widely isolated from buccal fissure; ligula gradually widened forwards; paraglossae narrow, not prolonged beyond ligular apex; microsculpture rather clear, composed of isodiametric meshes on clypeus and vertex and of short-transverse or square meshes on frons. Pronotum subcordate, 1.38–1.46 times as wide as long, gently convex; sides arcuate in apical half, thence gently and straightly convergent behind, sinuate before base; apex thinly bordered; base 1.22–1.30 times as

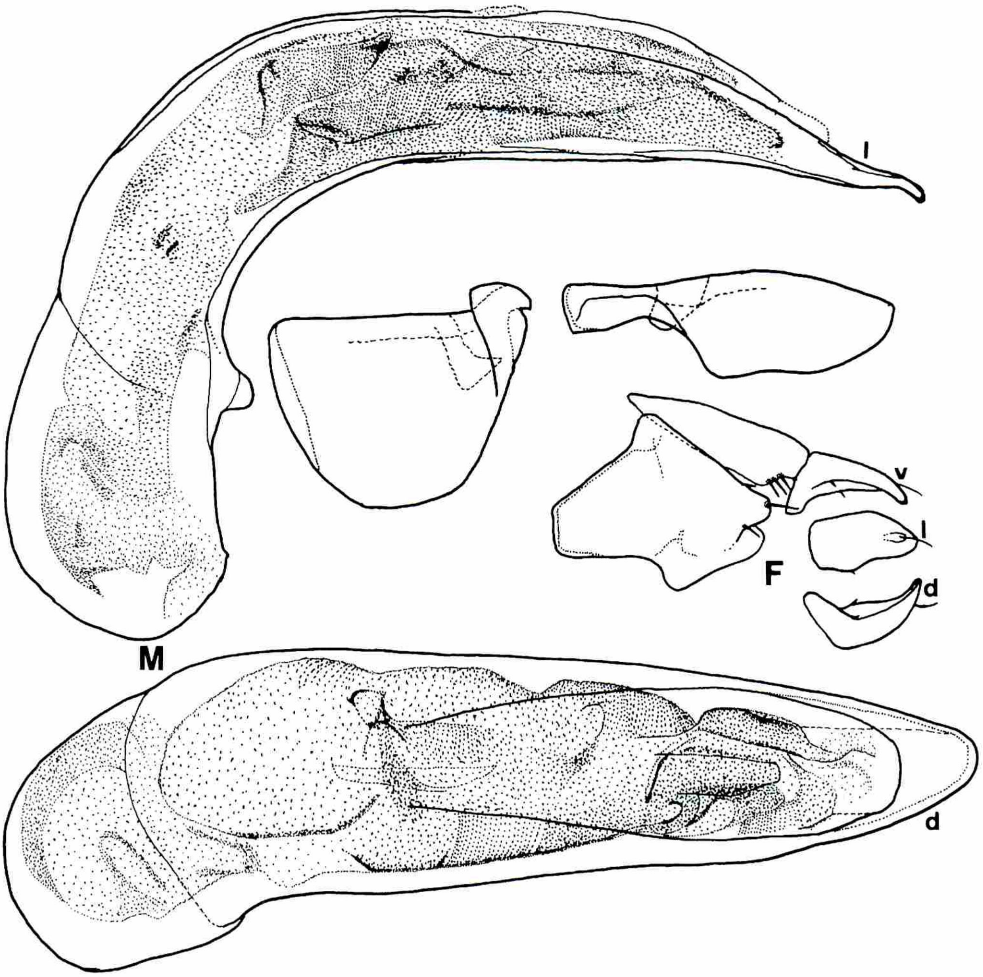


Fig. 14. Genitalia of *Trichotichnus* (*Amaroschesis*) *acuticollis* N. Ito, sp. nov.; M, male genitalia; F, female genitalia; d, dorsal view; l, lateral view; v, ventral view.

wide as apex, thickly bordered lengthwise, more deeply emarginate than *T. minshanensis*, the emargination uniform or straight in the middle; basal angles sharply triangularly protrudent obliquo-posteriad; lateral furrows gradually widened and fused with basal foveae each of which does not possesses hump and is narrowly concave; dorsal punctures sparse and rather fine on disc, gradually becoming coarser and denser towards all margins, especially coarse in basal foveae; microsculpture clearly impressed, consisting of transverse meshes on disc and of isodiametric meshes near apex, and in lateral furrows and basal foveae. Elytra ovate, about a half longer than wide, one-third wider than the pronotal width, gently convex; apices narrowly rounded, blunt or angulate at sutural angles; bases straight; humeral angles slightly protruding forwards, obtuse and angulate; dorsal pore of 3rd interval situated near middle, sometimes lacking; marginal series continued, composed of 23–24 umbilicate pores. Hind wings vestigial, 0.16 times as long as the elytral length. Metepisternum short, 0.88 times as long as wide; 6th abdominal sternite in ♂ bisetose at each side and truncate at apex. Hind femur trisetose along hind margin; tarsi very sparsely and dorsally furnished with extremely short pubescence, hind tarsi one-ninth longer in ♂ and one-eleventh shorter in ♀ than the width of head, 1st segment slightly longer than two-thirds of the 2nd and 3rd taken together, 2nd one-fourth longer than the 3rd and twice the 4th, claw segment quadrisetose ventrally on each side. Aedeagus (Fig. 14–M) stout, clearly curved behind basal bulb, thence straightly prolonged backwards, steeply tapered near apex, weakly ventro-obliquely at tip; apical orifice widely opening only near apex, inner sac without ant sclerites; apical lobe transverse, widely rounded at distal margin; ventral surface longitudinally depressed, ridged at sides and along middle of depression from apical third to the middle.

Length: 9.4–10.9 mm. Width: 4.4–5.1 mm.

Holotype: ♂, Qiling Mts., 2,100 m, Xunyangba env., Shaanxi Prov., China, 11–20. VI. 2000. (Preserved in OMNH). Paratypes: 3♂♂, 1♀, same data as the holotype; 1♂, Qiling Shan Mts., ~2,000 m, 33.8 N, 108.8 E, road Xian-Ningshan, pass 50 Km from S Xi'an, South Shaanxi, China, 11. VI. 2000, Jaroslav TURNA leg.; 1♂, 1♀, pas 20 km Zhenping, 32°1'N, 109°4'E, S. Shaanxi, China, 26–28. VI. 2000, O. ŠAFRÁNEK leg.

Trichotichnus (*Trichotichnus*) *norikoae* N. ITO, sp. nov.

(Figs. 5 and 15)

This new species is similar to *Trichotichnus* (*Trichotichnus*) *anisodactyloides* N. ITO, but the body is a little smaller in size, the pronotum is angulate at basal angles instead of being angularly rounded, more thinly bordered at base, not arcuate but linearly convergent behind at sides, more widely punctate, and more clearly microsculptured.

Body widely oblong, black, shiny, with weakly iridescent lustre on elytra; palpi, maxillary, antennae, tibiae except fore tibiae slightly darker and tarsi light reddish brown, mandibles, labrum, and lateral margins of pronotum dark brown. Head somewhat small, 0.62–0.65 times as wide as the pronotal width, with very sparse and microscopic punctures; labrum subsquare, weakly bilobate at apex; clypeal suture shallow lengthwise; frontal impressions moderate in depth, straightly divergent behind; eyes relatively small, not prominent; temples feebly bulging, long, one-third of the eye length; genuine ventral margin of eye narrowly separated from buccal fissure; ligula narrow, abruptly expanded just before apex; epilobes of mentum well widened forwards; microsculpture almost lacking, observable as isodiametric meshes on clypeus and as vague transverse meshes laterally on vertex. Pronotum transversely subquadrate, 1.48–1.52 times as wide as long, weakly convex, smooth centrally, minutely and moderately punctate in apical and wide lateral portions, and coarsely so in lateral furrows and basal foveae; sides arcuate in apical half, thence linearly oblique behind; apex bearing border entire or interrupted medially; base 1.19–1.32 times as wide as apex, rather thickly bordered throughout; apical angles well protruding, widely arcuate; basal angles each obtuse, angulate, and with small tooth at tip; lateral furrows gradually widened behind, fallen into basal foveae each of which possesses wide and weak swell and with a small concavity at inner side of the swell; microsculpture partly visible as transverse meshes on disc and clearly so as isodiametric meshes in apical portion and lateral furrows and basal foveae. Elytra elliptical, 1.18–1.24 times as wide as the pronotal width; sides weakly curved at humeri, shallowly sinuate preapically; apices narrowly rounded, blunt at sutural angles; bases almost linear, slightly

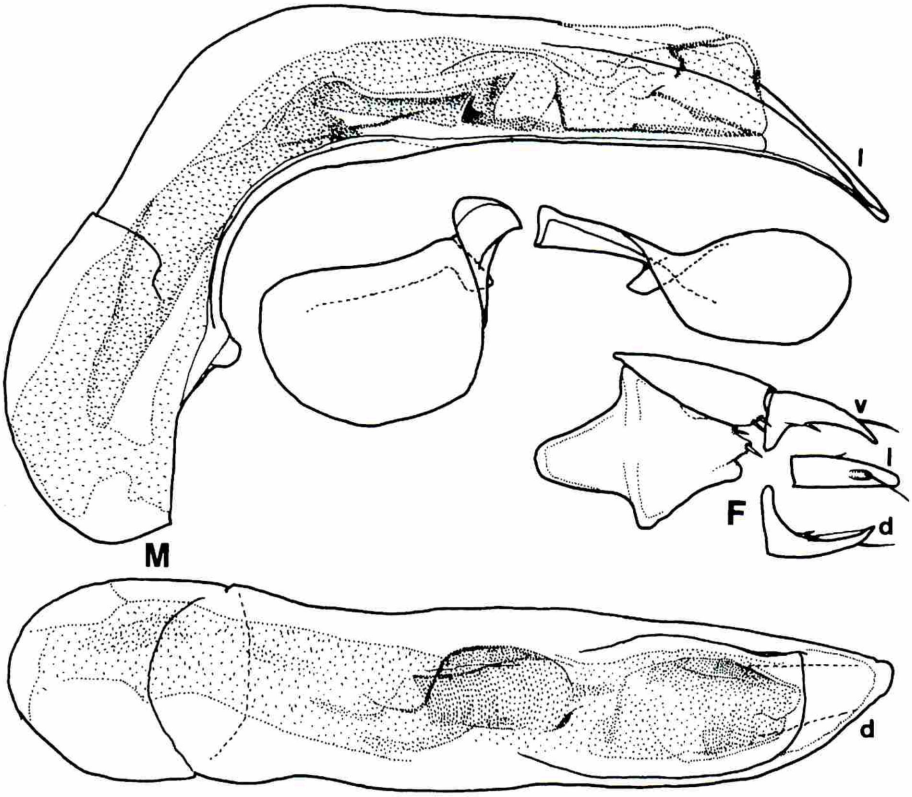


Fig. 15. Genitalia of *Trichotichnus* (*Trichotichnus*) *norikoae* N. Ito, sp. nov.; M, male genitalia; F, female genitalia; d, dorsal view; l, lateral view; v, ventral view.

sloping near humeri; marginal series divided into two groups, anterior group consisting of 9–12 and posterior one of 10–12 umbilicate pores; surface finely and sparsely microlined. Hind wings fully developed. Metepisternum three-tenths longer than wide; 6th abdominal sternite both sexes bisetose at each side, subtruncate in ♂ and widely and weakly arcuate in ♀ at apical margin. Hind tarsi in ♂ as long as and one-fifth shorter in ♀ than the 2nd and 3rd taken together, 1st one-tenth shorter than the 2nd and 3rd taken together, 2nd one-fifth longer than the 3rd and twice the 4th, claw segment trisetose along each ventral margin. Aedeagus (Fig. 15–M) relatively large, thick, straight in middle, gently curved ventrad at apex which is not thickened; apical orifice widely open, inner sac without any sclerite; ventral surface ridged at each side, rather deeply depressed between the ridges. Stylus (Fig. 15–F) somewhat stout, gently curved outward, with a spine at each outer margin; basal segment bisetose apico-externally; valvifer bearing two setae respectively at apex and behind there.

Length: 9.4–10.8 mm. Width: 4.1–4.4 mm.

Holotype: ♂, Qiling Mts., 1,200 m, Xunyangba env., Shaanxi Prov., China, 20. V–10. VI. 2001 (Preserved in OMNH). Paratypes: 2♂♂, 13♀♀, same data as the holotype; 9♀♀, Haozhenzi env., 1,300 m, SW Shaanxi Prov., C. China, 29. VIII–3. IX. 2000.

Trichotichnus (*Trichotichnus*) *pseudocongruus* N. Ito, sp. nov.

(Figs. 6 and 16)

This new species is allied to the preceding new species, *T. norikoae*, but in the former the body is smaller in size, the pronotum is more sparsely and finely punctate and not arcuate but shallowly sinuate before base, and the elytra are somewhat blunt at humeral angles instead of being acute. The new species is also similar to *Trichotichnus* (*Trichotichnus*) *congruus* (Motschulsky), but is distinguished from the latter by the body is larger in size, the pronotum is more weakly convergent basad at sides, more swollen in basal foveae and narrower in lateral furrows, the elytra are almost parallel at sides instead of gently arcuate, and the hind tarsi are longer.

Body similar in shape to *T. congruus*, black or slightly brownish, iridescent on elytra; buccal part except for mentum, antennae and tarsi light brown, lateral and basal margins of pronotum and elytra, femora and tibiae brown. Head moderate in width, approximately two-thirds times as wide as the pronotal width, very finely and sparsely punctate, gently convex, with interocular space wide, seven-tenths of the width of head; frontal impressions gently arcuate divergent behind; eyes short and weakly bulging; epilobes of mentum not widened forwards; microsculpture partly impressed, observable as isodiametric meshes on apical part of clypeus and as vague transverse meshes near vertex. Pronotum weakly cordate, 1.45–1.49 times

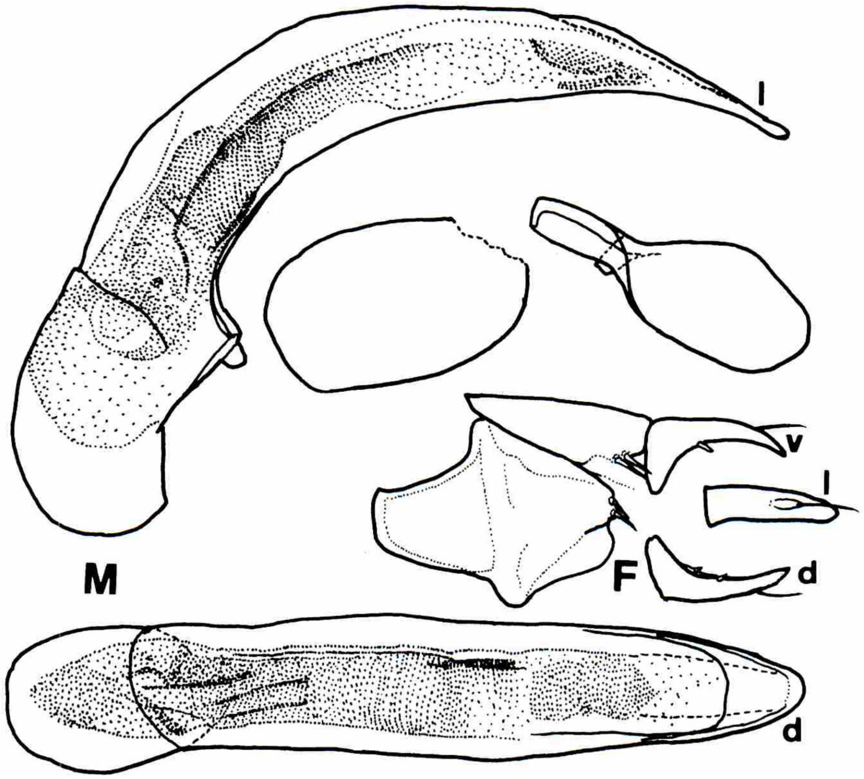


Fig. 16. Genitalia of *Trichotichnus* (*Trichotichnus*) *pseudocongruus* N. Ito, sp. nov.; M, male genitalia; F, female genitalia; d, dorsal view; l, lateral view; v, ventral view.

as wide as long, almost smooth, not coarsely and moderately punctate in lateral furrows and basal foveae; sides clearly arcuate in apical half, thence gently convergent backwards and shallowly sinuate before base; apex moderately emarginate, straight at the bottom, with border interrupted medially; base slightly larger than one and one-fourth times as wide as apex, hardly bisinuate, thickly bordered lengthwise; apical angles narrowly rounded; basal angles obtuse and angulate; lateral furrows narrow, not or slightly expanded near base; basal foveae each widely humped, with small and oblong concave in the middle; front and hind transverse impressions obscure; median line fine, shallow, not reaching apex and base; microsculpture rather clear, consisting of fine transverse meshes on disc and of isodiametric meshes near apex and in lateral furrows and basal foveae. Elytra oblong, three-tenths wider than the pronotal width, a half longer than wide; intervals weakly elevated, a setiferous pore of 3rd interval situated at apical three-tenths; marginal series interrupted in middle, composed of 9 + (10–11) umbilicate pores; surface somewhat clearly and transversely microlined. Hind wings fully developed. Metepisternum one-third longer than wide; sixth abdominal sternite in both sexes bisetose at each side, weakly rounded in ♂ and narrowly so in ♀ at apical margin. Hind femora bisetose near hind margin; hind tarsi 0.84 times in ♂ and 0.81–0.83 times in ♀ as long as the width of head, 1st segment one-sixth longer than the 2nd and 3rd taken together, 2nd two-fifths longer than the 3rd and four-fifths longer than the 4th, claw segment bi- or trisetose along each ventral margin. Aedeagus (Fig. 16–M) slender, clearly arcuate, gradually thinned towards distad, not thickened at tip; apical orifice wide, without any sclerites in inner sac; apical lobe nearly as long as wide, subtriangular, rounded and unbordered at distal margin; ventral surface narrowly bordered at sides, shallowly concave between the borders.

Length: 8.2–8.5 mm. Width: 3.3–3.4 mm.

Holotype: ♂, Haozhenzi env., 1,300 m, SW Shaanxi, China, 29. VIII.–3. IX. 2000 (Preserved in OMNH). Paratypes: 2♀♀, same data as the holotype.

要　　約

伊藤　昇．中国陝西省・湖北省・甘粛省からの*Trichotichnus* 属7新種とSchauberger が記載した*Trichotichnus denticollis* と *Trichotichnus jedlickai* の再記載．——— 中国での種多様化は極めて顕著であり多数の分類群から報告がなされているが，Harpaliniにおいても同様である．*Trichotichnus* 属もこの数年に多くの種が記載されたが，他の分類群同様極めて特化した種が見られ，Harpaliniでは安定形質である剛毛の様式が変化する．ごく最近著者は再び中国産の標本を検する機会を持ち，未記載種を見出した．本稿において7新種を記載するとともに，Schauberger が記載した*Trichotichnus denticollis* と *Trichotichnus jedlickai* の再記載をした。*T. denticollis* は雄交尾器の内袋に*leptopus* 種群と同様の長い骨片を持っており，特異である。*Amaroschesis* 亜属はこの骨片を持たないことが特徴の一つであり，今後本亜属の分類学的位置づけを再考する必要があるが，標本と情報量が少ないのでここでは分類学的変更などの処置は控えておく．本稿で記載した*Trichotichunus norikoae* は筆者の研究生活を側面から援助してくれた妻の名前に因むものである．

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原稿作成の要領

欧文原稿

1. 原稿はプリントアウトしたものとフロッピーディスクに書き込んだものとを提出する．用紙はＡ４判を用い，左右に3 cm 以上の余白をあけ，タイプライター，ワードプロセッサーあるいはコンピューターで打ち出したものとする．行間はダブルスペースとし，表題や見出しを含めていかなる場合も大文字だけでは打たない．従って姓名のうちイニシャル以外はすべて小文字で打つこと（例：Yasuhiko Hayashi)．また英文原稿内では♂♀記号及び和文要約を除き邦文文字（日本語ホント）を用いてはならない．フロッピーディスクはマッキントッシュまたはＤＯＳフォーマットのいづれかで，原稿はテキストファイル化したものを提出すること．フロッピーディスクを提出できない場合は，プリント原稿をスキャナーで読み取るためイタリックやボールドなどの指定のない文字を使用し，下線や訂正の書き込みのない原稿（コピーでもよい）を一部付ける．
2. 報文原稿は，表題，著者名，所属機関とその所在地，または住所，刷り上がり 10 行程度までの（約150語）の英文の著者抄録 (Abstract)，本文，和文要約，文献の順に配列する．

   提出原稿は二部とし，内一部は無処置で，他の一部は動，植物の属およびそれ以下の学名に下線を引き，また人名には二重の下線を引く（第一字を除いて)．付図の挿入希望箇所は鉛筆などで表示しておく．引用文献は著者名のアルファベット順に並べ，下記の形式で記す．

   Blackwelder, R. E., 1936. Morphology of the coleopterous family Staphylinidae. Smiths. misc. Coll., 94 (13): 1-102

   —1952. The generic names of the beetle family Staphylinidae with an essay on genotypy. Bull. U.S. natn. Mus., 200: i-iv+1-483.

   Müler, J., 1925. Terzo contributo alla conoscenza del genere Staphylinus L. Boll. Soc.ent.ital., 50: 40–48.
3. 報文中の採集または検視データは以下のように表記する．

   （例）3♂♂, 2♀♀, Amaishi, Hyôgo, 28. V. 1995, Y. Hayashi leg.
4. 原稿には原稿用紙と同質の表紙をつけ，これに表題，ランニング・タイトル（簡略化した論文表題，— 欧文 40 字内外)，著者名，連絡先を明記し，赤字で原稿及び図表の枚数，別刷りの必要部数, その他連絡事項など記入．
5. 図は耐水性黒色インクで鮮明に描き，そのまま印刷出来るようにする．図の拡大（縮小）率を示したい場合は図中にスケールを入れる．原図には薄紙のカバーをかけ，これに著者名，図の番号，上の方向を示し，図の裏にその種名を入れる．もし原図版上に取り扱い指定文字を入れるときには，必ず青鉛筆を用いる．原図の大きさは，台紙を含めてＡ４判 (210 mm × 295 mm) 以内とされたい．また原図の返送が必要な場合は，カバーにその旨を記入する．
6. 図の説明及び表はそれぞれ別紙に書き，原稿末につける．

編集委員からのお願い

最近の投稿原稿には当会の投稿規定を甚だしく逸脱したものが送られてきます．投稿される原稿については，投稿規定並びに原稿作製の要領をよく参照されて作成してください．本文の入ったフロッピーディスクはマッキントッシュまたはＭＳ－ＤＯＳのフォーマットされたものに記録し，必ずテキストファイル化してください．ワードプロセッサー専用機は互換性のないＯＳのため，そのままでは取り込みは出来ません．ＤＯＳ変換したものをお送り下さい．

プリント原稿のみの場合には特に段落がはっきり判るように作成してください．また，段落内の文節や単語の間が開きすぎないようにしてください．スキャナーで取り込むときに文章がバラけて取り込まれ，文章が壊れることがあります．

引用文献については，編集でチェック出来ないものもあるので，本誌の書式をよく確かめてください．また文献名の省略形式も充分確認してください．

人名（欧文）は第１文字を大文字に，残り全てを小文字で打ち込んで下さい．編集部が自動でスモールキャピタル化します（全て大文字で印字するとスモールキャピタル化出来ません)．中国，韓国，タイなど，日本と同じ順序による姓名表記の場合も，欧米式の姓名表記とします（つまり名，姓の順)．

投稿原稿，別刷について

弊会では原稿の受入に関してレフリー制度を採用しております．ご投稿戴く原稿は第三者による査読をお受けになられた上でお送り下さい．

従来超過ページ負担無しを１０ページまでとしていましたが，当分の間１６ページまでとします．また別刷は全て表紙付きとして，表紙代のみ学会負担とし，他の経費は著者負担とします．現在最も高くついているのが製本代です．

和文要約について

評論への投稿原稿には和文要約を必ず付けて下さい．学術用語で打ち出せない漢字もありますが，できるだけ努力します．

hhc
ヒューマン・ヘルスケア企業
Eisai
エーザイ

一日いれば、くすり博士。

いつの時代にも、どこの国でも、薬は「いつも健康で、長生きしたい」「早く病気をなおしたい」という願いをこめて生み出され、医学とともに進歩してきました。

その薬の歴史を物語る貴重な資料がわかりやすく展示され、だれでも自由に見られるのが「内藤記念くすり博物館」です。

岐阜県川島町のエーザイ川島工園の中にあり、展示や映像や付属薬用植物園などを楽しく見ているうちに、薬に関するいろいろなことを学ぶことができます。

入場無料・月曜日は休館です。

エーザイ川島工園は、自然林を残した約14万坪の敷地の中に製剤工場や研究所や博物館などの建物が点在しており、公園のような工場なので「工園」と名付けました。

内藤記念くすり博物館

〒501-61　岐阜県羽島郡川島町
☎　058689-2101
エーザイ川島工園内

著作権

昆虫学評論および“ねじればね”に掲載された著作は原則として本会に属する．

1.. 執筆者自身が自分の著作の一部を複製・翻訳などの形で利用する場合，これに対して当会では原則的に意義申し立てしたり妨げることはしない．ただし，執筆者自身でも全文を複製の形で他の著作物に利用する場合に限り，事前に本会へ文書で申し出を行い，許諾を求めなければならない．
2. 第三者から論文の複製あるいは転載に関する許諾の要請があり，当会において必要と認めた場合は，執筆者に代わって許諾することがある．

投稿規程

1. 投稿は原則として当学会員に限る．登載は原則的には受領順によるが，全額実費負担の原稿は優先的に取り扱うことが可能である．但しレフェリー制の導入により掲載の順位の変更がありうる（原稿は適当な方の校閲を受けたものであることが望ましい）．
2. 昆虫学評論には，当分の間，欧文原稿のみを掲載し，和文原稿は当面“ねじればね”に掲載されるものとする．但し，原著には和文要約をつけることとする．またプレートは当分の間廃止し，図版はすべて本文内に収めるtext figure 扱いとする．但し，著者負担によるカラー・プレートは認める．原稿の長さは刷り上がり10ページ以内とし，超過ページの印刷経費は著者負担とする．
3. 原稿（本文，図，表および表紙）は別記の要領で作成し，２部（一部はコピーで）を編集幹事に書留で郵送する．本文をワードプロセッサーで作成した場合はDOSフォーマット化されたフロッピーに，またコンピューターで作成した場合はマッキントッシュまたはDOS-フォーマット化されたフロッピー（1.44MB）に，ストリップテキスト化した後それぞれ書き込んで，プリントアウトした原稿とともに同時に提出することが望ましい．フロッピーが提出されることによって校正や編集上の負担が著しく軽減される（当学会においてはPower Mac 7600/200にワードパーフェクトを乗せて編集している）．その他の詳しい原稿作成の要領については別ページを参照のこと．
4. 原稿の掲載上の体裁については編集委員に一任されたい．編集委員はレフェリーの意見に基づいて原稿の内容について著者に再検討や訂正を求めることがある．
5. 著者校正は原則として初校のみとする．校正での大幅な変更や追加は認めない．
6. 別刷は50部単位で作成し，費用は全額著者負担とする．
7. 原稿の送付，問い合わせ先は下記とする．

昆虫学評論
〒563–0104　大阪府豊能郡豊能町光風台5–3–5　安藤清志　Tel 0727–38–1012
〒666–0116　川西市水明台 3–1–73　林　靖彦　Tel 0727–93–3712　Fax 0771–86–0863（学会事務局）
ねじればね
〒611–0002　宇治市木幡熊小路19–35　水野弘造　Tel 0774–32–4929
〒614–8375　八幡市男山雄徳 8　E7–303　伊藤建夫　Tel 075–983–3491
学会本部・担当
〒546–0034　大阪市東住吉区長居公園１－23　大阪市立自然史博物館・初宿成彦
Tel 06–6697–6221　Fax 06–6697–6225　E-mail: shiyake@mus-nh.city.osaka.jp

和文原稿について

和文原稿は，原著に付ける和文要約を除いて，“ねじればね”誌上にのみ掲載するので，新しい分類学的処理を含む内容の論文の掲載は出来ません．“ねじればね”は年２回以上の発行として，１号８～16頁建てとします．分布，生態などの短報，分類学的な解説やノート，同定の手引き，その他役にたつ論説，情報など幅広い内容で紙面を作っていきたいと考えています．

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